

## Using this Manual

Though the SSMMM is designed for fault diagnosis operations using an interactive user interface, there may be times that you will need to refer to this manual to find out more about using more complex procedures. When performing actual fault diagnostic work, you should also refer to the Service Manual. Click the title in contents to go to the relevant page.



# Contents

Using this Manual .....	1	List of terms related to Wireless LAN communication .....	54
Introduction .....	7	Communication Messages .....	55
List of Abbreviation .....	8	All Systems Diagnosis .....	56
Before Starting Diagnosis .....	11	Each System Check .....	57
Handling Precautions .....	11	Current Data Display and Save .....	59
SSMIII Features .....	11	Digital Data Screen Operations .....	60
Authentication Registration .....	12	Graph 1 Screen .....	64
Installing the PC Application on a CF .....	14	Graph 2 Screen (Single-screen 8-channel Graph) .....	70
Selection of the interface box used .....	16	Setting All Clear Function .....	71
Switching the SDI Mode .....	17	Functions for Initializing Toolbars .....	71
SDI Mode Types .....	17	Sampling Item Memory .....	72
Switching a Mode .....	17	Creating a Mode File .....	72
DST-i .....	18	Reading a Mode File for Sampling .....	74
LED indicator specifications of DST-i .....	18	Trigger .....	76
Bluetooth communication .....	18	Getting Ready .....	76
A confirmation item and necessary measures when a problem occurred at the time of DST-i use .....	30	Configuring Trigger of input data Settings .....	77
Display Software Version Information .....	32	Configuring a Manual Trigger .....	80
PC Application Version Information .....	32	Two Cursor Analysis .....	81
CF Application Version Information .....	32	Cursor Numerical Value Information between Two Points .....	81
Starting Up the System .....	33	Data Cut-and-Save .....	83
Main Menu Items .....	33	Converting Sampled Data to CSV .....	86
Quitting the System .....	34	How to Convert to CSV from Menu .....	86
Wireless LAN Communication .....	36	How to Convert to CSV with Save Icon or Save Button .....	87
Caution items .....	36	In the Case of Too Many Sampled Data .....	88
Parts required for wireless LAN communication .....	37	Saving Displayed Data .....	91
Outline of the wireless LAN connection procedure .....	37	How to Save .....	91
Wireless LAN setting on the PC side .....	37	Saved Data Display .....	92
Wireless LAN setting on the SDI side .....	50	Display Screen Operations .....	93
Switching to wireless LAN connection .....	51	Multiple display of saved data .....	93
Switching to USB connection .....	52	Diagnostic Codes Display .....	96
When using equipment already set for wireless LAN .....	53	Manual Link (Excluding North America) .....	99
		Freeze Frame Data .....	101
		Saving data .....	102
		Printing Data .....	102
		Clearing Memory .....	103



System Operation Check Mode .....	105	Radar axis adjustment (ADA Camera System) .....	145
Actuator ON/OFF Operation .....	106	Radar axis adjustment (Adaptive cruise control system) .....	147
Fuel Pump Control .....	106	Registering the Transmitter .....	149
Fixed Idle Ignition Timing .....	107	Keyless Entry Control Module Function Setting (Keyless unit Customizing) .....	151
Idle Speed Control .....	107	Registering the Tire Pressure Monitoring System Transmitter (ID) .....	153
Injector Control .....	107	Calibrating the Occupant Detection System .....	156
EGR Valve Control .....	107	Rezero the Occupant Detection System .....	160
Sub Fuel Pump Control .....	108	Getting Ready .....	160
Wastegate Valve Control .....	108	Rezero .....	160
High Pressure Fuel Inspection .....	108	Airbag System .....	163
Alternator Control .....	108	CAN System Fault Location .....	164
Compression monitor .....	108	Registering the Immobilizer (Not Equipped with Keyless Access with Push Button Start System) .....	165
Simultaneous System Measurement .....	111	Registering the Immobilizer (Equipped with the Keyless Access with Push Button Start System) .....	170
Dealer Check Mode Procedure .....	112	Registering the Smart Immobilizer .....	172
OBD System .....	116	Registering the Smart Control Module .....	176
Function Check Sequence .....	122	Registering the Engine Control Module .....	178
ABS Function Check Mode .....	123	Readout the Number of Access Key Registration .....	181
VDC Function Check Mode .....	123	Delete the Access Key ID .....	182
Steering Angle Sensor Neutral and Lateral G Sensor Zero Setting Mode .....	123	Registering the Remote Control Engine Starter .....	185
Fault Data Display .....	124	Keyless access with push button start system: Correspondence table at the time of parts failure .....	189
Selection of Parameter .....	126	Registering the Audio Security (U.K Only) .....	199
Registration Procedure .....	126	Learning and inspection mode related to AT .....	202
Confirm on Parameter .....	128	Getting Ready .....	202
Confirm Procedure .....	128	AT learning mode .....	203
Body Integrated Module Destination Market Registry (Excluding Japan) .....	130	AT air bleeding mode .....	206
Confirmation of Vehicle Destination (Part 1) .....	130	Rear differential inspection mode .....	207
Confirmation of Vehicle Destination (Part 2) .....	131	AWD ON/OFF switching mode .....	207
Registration Steps for Registering Vehicle Destination .....	132		
Body Integrated Module Function Check .....	134		
Body Integrated Module Function Setting (Integ.Unit Customizing) .....	136		
Display the List of Function Setting (Integ.Unit Customizing) .....	138		
How to Display the List .....	138		
Displaying Saved Files .....	140		
Printing the Data .....	140		
Impact Sensor .....	141		
Camera Adjustment .....	143		



Maintenance mode (Excluding North America) .....	208	Maintenance at the time of control module replacement .....	238
Getting Ready .....	208	Confirmation of CAN bus connection to ECU .....	240
DPF maintenance .....	209	Electric Fluid Pump inspection mode .....	242
Oil maintenance mode .....	210	SDI Driving Recorder (SDR) .....	245
Maintenance at the time of control module replacement .....	211	Creating an SDR Setting File .....	245
Learning, inspection, and registration mode related to diesel engines (Excluding North America) .....	213	Saving SDR Data to CF Card .....	247
Diesel compulsory learning mode .....	213	Saving SDR Data to PC .....	248
Turbo vanes angle learning .....	215	Opening and analyzing saved data .....	251
Registering the Injector Code .....	215	Trigger Function .....	252
Parking Brake System Maintenance Operation Mode .....	222	DST-i Driving Recorder (SDR) .....	255
Getting Ready .....	222	Creating an SDR Setting File .....	255
Force Sensor Calibration Mode .....	223	Saving SDR Data to SD Card .....	257
Break-in Parking Brake Drive Mode .....	224	Saving SDR Data to PC .....	260
Parking Brake Removal Mode .....	225	Opening and analyzing saved data .....	262
Clutch Engagement Position Setting .....	226	Trigger Function .....	263
Clutch Sensor Calibration Mode .....	226	Date and time setting .....	265
Parameter Initialization Mode .....	227	SDI Control Module Analog Simultaneous Measurement (SDR) .....	267
Air Condition System .....	228	Creating an SDR Setting File .....	267
Getting Ready .....	228	Saving SDR Data to CF Card .....	270
Variable compressor break-in drive .....	229	Saving SDR Data to PC .....	271
Power Steering System .....	230	Opening and analyzing saved data .....	271
Getting Ready .....	230	DST-i Control Module Analog Simultaneous Measurement (SDR) .....	272
Clear Vehicle Specific Assist Map .....	230	Creating an SDR Setting File .....	272
Keyless access system .....	232	Saving SDR Data to SD Card .....	276
Getting Ready .....	232	Saving SDR Data to PC .....	277
Keyless access system check .....	233	Opening and analyzing saved data .....	277
Collation control module output check .....	234	Remote Box .....	278
Collation result history Clear .....	234	Handling Precautions .....	278
Automatic Light and Wiper system .....	235	Names of Parts .....	278
Getting Ready .....	235	Connecting to the SDI .....	278
Sensor initial setting .....	235	Remote Box Functions .....	278
Auto Start Stop Maintenance mode .....	237	Sampling of G Sensor Analog Output .....	279
Getting Ready .....	237	Guideline for reprogramming procedure for SSMIII .....	281
Maintenance at the time of starter replacement .....	238	Notes on doing control module reprogramming .....	281
		Control module reprogramming (Except for VDC of BRZ) .....	281



Control module reprogramming (VDC of BRZ) .....	284	Sampling with High-Grade Roughness Monitor .....	315
Option setting .....	288	Sampling with High-Grade Roughness Monitor (pulse measurement is unnecessary) .....	319
Changing the Screen Font .....	288	Changing Graph Range .....	321
Changing the Display Units .....	288	Saving Sampled Data .....	321
Changing the Display Language .....	288	Saved Data Display .....	322
Communication log data .....	289	SDI Stand-alone Diagnosis .....	324
Setup the switching output value .....	290	Getting Ready (Starting Up the SDI in Stand-alone Mode) .....	324
SDI Analog Sampling .....	291	All Systems Diagnosis .....	325
Handling Precautions .....	291	Diagnostic Codes Check on Each System .....	326
Pulse/Analog Kit Contents .....	291	Data Display .....	326
Getting Ready for Sampling .....	291	Saving Sampled Data .....	328
Starting a Sampling Operation .....	292	Save data stored in a CF card to a PC. ....	329
Configuring Analog Sampling Settings .....	293	Clearing Memory .....	333
Trigger Function .....	296	OBD Clearing Memory .....	334
Changing the Range while Using Auto Range .....	298	Selection of Parameter .....	335
Initialize Item Settings .....	299	Confirm on Parameter .....	336
Other Operations .....	299	Body Integrated Module Destination Market Registry (Excluding Japan) .....	337
DST-i Analog Sampling .....	300	Body Integrated Module Function Setting (Control Module Customizing) .....	340
SDI Control Module Analog Simultaneous Measurement .....	301	Impact Sensor .....	341
Starting Control Module Analog Simultaneous Measurement .....	301	Registering the Tire Pressure Monitoring System Transmitter (ID) .....	342
Stopping Control Module Analog Simultaneous Measurement .....	304	Registering the Immobilizer (Not Equipped with Keyless Access with Push Button Start System) .....	344
Trigger Function .....	304	Registering the Immobilizer (Equipped with the Keyless Access with Push Button Start System) .....	347
Data Select Screen .....	305	Registering the Smart Immobilizer .....	349
Setting All Clear Function .....	306	Registering the Smart Control Module .....	352
Other Operations .....	306	Registering the Engine Control Module .....	354
DST-i Control Module Analog Simultaneous Measurement .....	307	Readout the Number of Access Key Registration .....	356
Starting Control Module Analog Simultaneous Measurement .....	307	Delete the Access Key ID .....	357
Stopping Control Module Analog Simultaneous Measurement .....	310	Registering the Remote Control Engine Starter .....	359
Trigger Function .....	310		
Data Select Screen .....	311		
Setting All Clear Function .....	311		
Other Operations .....	311		
Roughness Monitor .....	313		
Sampling with Simple Roughness Monitor .....	313		



Configuring SDI Functions .....	360
Performing SDI Self-diagnosis .....	363
DST-i Stand-alone Diagnosis .....	368
Getting Ready (Starting Up the DST-i in Stand-alone Mode) .....	368
All System Diagnosis .....	369
Data Display .....	370
Diagnostic Code(s) Display .....	373
Clear Memory .....	374
Work Support .....	376
Body Integrated Module Function Setting (Control Module Customizing) .....	387
Registering the Immobilizer .....	390
Function Setup of DST-i .....	390
SDI System Menu .....	393
Getting Ready (Starting Up the SDI in the System Mode) .....	393
SELF CHECK (SDI Self-check) .....	393
VERSION CHECK .....	398
FUNCTION SETUP (SDI Function Setup) .....	398
List of Contents on Displayed Data .....	400
Engine .....	400
Transmission .....	425
Body Integrated Unit .....	438
Collation Control Module .....	456
Power Supply Control Module .....	463
Gateway Control Module .....	464
Communication Error Code List .....	465
Control Module Reprogramming Error Code List .....	467
Control Module Reprogramming Error Code List (PC Display) .....	467
Control Module Reprogramming Error Code List (NSM LCD Display) .....	481
SSMIII revision history .....	483
List of Part Numbers .....	484



## Introduction

The SSMIII (Until January 2015 version) is compatible with the following OS.

- [Windows 2000](#)
- [Windows XP](#)
- [Windows Vista](#)
- [Windows 7](#)
- [Windows 8](#)

The SSMIII (After April 2015 version) is compatible with the following OS.

- [Windows Vista](#)
- [Windows 7](#)
- [Windows 8](#)

The SSMIII is a powerful fault diagnosis device that has been developed using the latest advanced technology. Used in combination with a PC, it provides a tool for quick and efficient analysis of vehicle faults.

Application software running on a PC provides an interactive user interface for very simple operation. High-speed communication with the engine control system and transmission control system help to make checking of various phenomena faster than ever before.

Be sure to carefully read this manual in combination with the Service Manual to develop fault diagnostic skills by using SSMIII functions to their fullest.

Note that the illustrations and display screens shown in this manual may differ from those of the actual SSMIII due to specification modifications.

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## List of Abbreviation

Abbreviation	Spell-out
A/C	Air Conditioner
A/F	Air/Fuel ratio
ABS	Anti-lock Brake System
AC	Alternating Current
ACC	Accessory
ADA	Active Driving Assist
AET	AT Engine Torque request
ASSY	Assembly
AT	Automatic Transmission
ATF	Automatic Transmission Fluid
AWD	All Wheel Drive
BIU	Body Integrated Unit
BMP	Bit MaP
CAM	Camshaft
CAN	Controller Area Network
CD	Compact Disk
CD-ROM	Compact Disk Read Only Memory
CF	Compact Flash
CID	Calibration Identification
CNG	Compressed Natural Gas
COM	Common
CPC	Canister Purge Control solenoid valve
CR	Crankshaft
CSV	Comma Separated Values
CUW	Calibration Update Wizard
CVT	Continuously Variable Transmission
DC	Direct Current
DCCD	Drivers Control Center Differential
DPF	Diesel Particulate Filter
DRL	Daytime Running Lights
D-sub	D subminiature
DTC	Diagnostic Trouble Code
EAM	Engine AT Masking flag



Abbreviation	Spell-out
ECM	Electronic Control Module
EGR	Exhaust Gas Recirculation
ELCM	Evaporate Leak Check Module
EOP	Electronic Oil Pump
EPB	Electronic Parking Brake
ETC	Electronic Throttle Control system
FWD	Front Wheel Drive
H/U	Hydraulic Unit
IC	Integrated Circuit
ID	Identification
IG	Ignition
ISC	Idle Speed Control
ISG	Integrated Starter Generator
LAN	Local Area Network
LCD	Liquid Crystal Display
LED	Light Emitting Diode
LH	Left Hand
LSD	Limited Slip Differential
MIL	Malfunction Indication Lamp
MT	Manual Transmission
NSM	New Select Monitor
OBD	On Board Diagnosis
OCV	Oil flow Control solenoid Valve
OS	Operating System
OSV	Oil Switching solenoid Valve
P/W	Power Window
PAK	Pack
Pass	Passing
PC	Personal Computer
PTC	Positive Temperature Coefficient
PV	Power system supply Voltage *1
RAM	Random Access Memory
RH	Right Hand
ROM	Read Only Memory
RTC	Real Time Clock



Abbreviation	Spell-out
SAE	Society of Automotive Engineers
SDI	SUBARU Diagnostic Interface
SDR	SUBARU Driving Recorder
SI	International System of Units
SSMIII	SUBARU Select Monitor III
SW	Switch
TCM	Transmission Control Module
TCS	Traction Control System
TGV	Tumble Generator Valve
TPMS	Tire Pressure Monitoring System
Tr	Transistor
USB	Universal Serial Bus
VDC	Vehicle Dynamics Control
VVL	Variable Valve Lift
VVT	Variable Valve Timing

\*1: There are two power supplies, “Power system supply voltage” actuates an actuator and “Sensor system supply voltage” activates a sensor.



## Before Starting Diagnosis

### Handling Precautions

- The SDI and DST-i is a precision measuring instrument. Prevent water, oil, grease or other substance from getting on the SDI.
- Never try to take the SDI and DST-i (after this referred to as the interface box), or its bundled items apart.
- Never disconnect the diagnosis cable or datalink cable from the vehicle data link connector or the interface box while the system is ON. Doing so can damage the interface box.
- Never insert or remove a CF card or SD card while interface box power is turned on.
- Always insert the bundled dummy card in the card slot when not using a CF card.
- Take care to avoid damage to the LCD of the interface box. Should the LCD panel ever become cracked and start leaking liquid, do not touch the liquid. If you get the liquid on your skin, immediately flush the exposed area with large volumes of water. Should you experience any skin abnormalities, consult with a skin specialist immediately.
- Whenever using the SSMIII for fault diagnosis while the vehicle is in motion, never allow the driver to operate the SSMIII or SDI.
- In case of selecting item on System Selection Menu right after turning on SDI power, there is a possibility that SDI buzzer will ring out and SDI power will turn off. This is due to SDI hardware specification. If this condition occurs, start PC application after SDI powered on and CF application or Driving Recorder starts completely.

### SSMIII Features

The SSMIII is a fault diagnosis device that provides a standard means of automotive fault diagnosis. It communicates with the various system control modules equipped in a vehicle to monitor control module input/output data, and to allow checking and deletion of diagnostic codes generated by the control module. It also provides means to reset control module learning values and other control parameters, and to force operation of engine control system actuators.

#### 1) Bi-directional Communication with Vehicle Electronic Control Modules.

The SSMIII makes it possible to perform bi-directional communication between a PC and each of a vehicle's on-board control modules via a interface box. This makes it possible to monitor control module data, check control module diagnostic codes, and force operation of actuators.

#### 2) Powerful Application Software

Application software running on a PC provides an interactive user interface for very simple operation. A hierarchical menu system simplifies routine operations, even for novice users.

#### 3) Communication Functions

The interface box communicates directly with the vehicle's control modules, while transfer between the interface box and PC is performed over a high-speed USB1.1 or USB2.0 connection. The SDI is also equipped with card slots, creating hardware architecture that can support both wired and wireless LAN communication between the SDI and PC.

#### 4) Multilingual Support

The SSMIII supports five languages: English, French, German, Spanish, and Japanese.

The language switches automatically in accordance with the language of the operating system running on the connected PC, eliminating operator confusion.

#### 5) Data Sampling

Data sampling is performed for all items, which eliminates the chance of the operator forgetting to obtain required data. After all data is sampled and stored, specific data items can be recalled for analysis as required. Communication speed is fast enough to support normal diagnosis without any problem. This system can be configured to select measurement items during sampling, which switches the communication protocol for high-speed data communication.

Switching is performed at intervals of some tens of ms, so phenomena can be reliably recorded, even if they have a very short life. (This capability is available with engines and transmission control systems that employ the latest communication protocol.)



#### 6) Digital Data Display

Data is displayed on a PC monitor making it easier to view.

Though the number of items that can be displayed depends on the size of the PC monitor screen and the font size, typically more than 25 items can be displayed simultaneously.

#### 7) Graph Data Display

Data displayed on PC monitor in color greatly facilitates interpretation and analysis of diagnostic phenomena. Graph line colors can be specified as desired, which makes it possible to display graphs that suit individual preferences and needs.

#### 8) Diagnosis Cable

A standard SAE J1962 connector is used on the end of the cable that connects to the vehicle.

The end that connects to the SDI is a highly durable D-Sub 44-pin connector.

The length of the cable is a convenient 2.3 m (7.5 ft). Reprogramming work can also be performed using this cable.

#### 9) USB cable

Since communication between the PC and interface box is performed using USB1.1 or USB2.0 protocol, a USB cable is used to connect the PC and interface box.

The cable is 3 m (10 ft) long, which allows computer analysis even when the PC is located at a considerable distance from the vehicle.

#### 10) SDI Cushioning Rubber

Cushioning rubber attached to SDI absorbs shock and protects the interface from damage if it is dropped.

## Authentication Registration

Below explains SSMIII Software Authentication Registration, a function to improve software security related to vehicle security.

#### IMPORTANT:

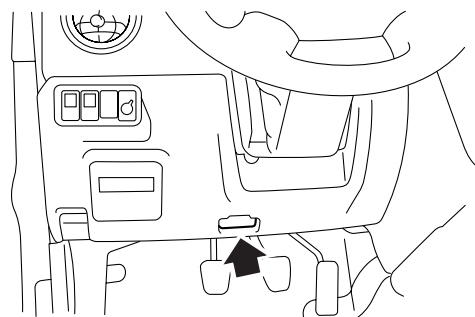
In case of Authentication Registration is yet performed, SDI Production Number entry screen and/or password entry screen may be displayed when selecting items on Main Menu. Be sure to perform

Authentication Registration before using SSMIII application software.

1. Prepare the SDI, diagnosis cable, USB cable, and a PC with the PC application installed.
2. Use the diagnosis cable to connect the SDI to the data link connector of the vehicle.

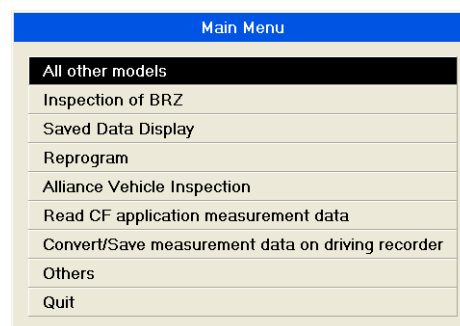
#### NOTE:

SDI power will turn on automatically when the diagnosis cable is connected to the vehicle. If the PWR LED of the SDI does not light, turn on the vehicle's ignition switch or start the engine, and then press the SDI [PWR] key and check again to see if the PWR LED of the SDI lights.



SMU-00113

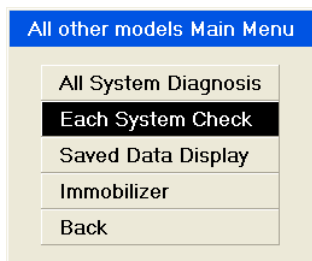
3. Use the USB cable to connect the SDI to the PC.
4. Turn on the vehicle's ignition switch.
5. Double-click the SSMIII icon on the PC screen to start up the application.
6. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



SMU-01294

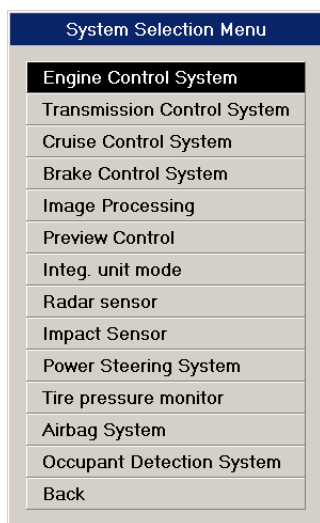


7. Select [Each System Check] at the item selection screen.



SMU-01296

8. On the System Selection Menu, select the desired system. (As an example, "Engine Control System" is selected.)



SMU-00665

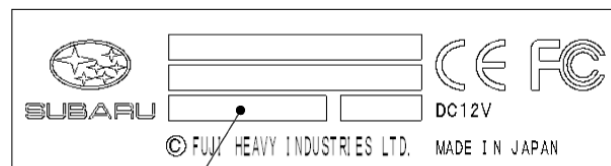
9. SDI Production Number entry screen will be displayed. Enter connected SDI Production Number and then click [OK] button. (Here, "100001" is entered as an example.)



SMU-01216

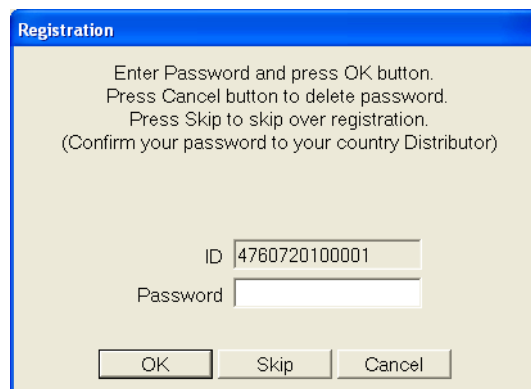
**NOTE:**

The SDI Production Number is shown on the seal on the side of the SDI.

**Production Number**

SMU-01000

10. Password entry screen will be displayed. Enter password and then click [OK] button.

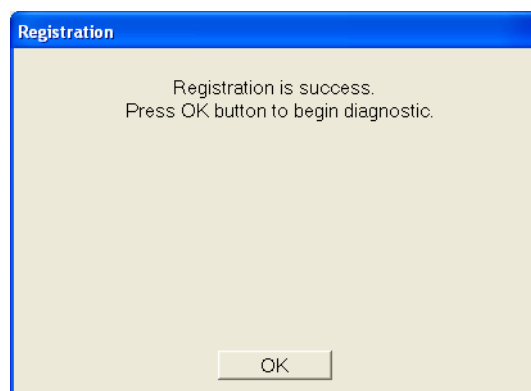


SMU-01217

**NOTE:**

Confirm your password to your country distributor or dealership in which you purchased SSMIII.

11. The screen shown below will appear if Authentication Registration ends normally. Click the [OK] button.



SMU-01218



## Installing the PC Application on a CF

The "CF application" is SSMIII application software you install on CF card.

This installation procedure writes software to a CF card.

1. Please prepare the following things. SDI, USB cable, PC (SSMIII is installed), the diagnosis cable or data link cable.
2. Insert an CF card into the CF card slot of the SDI.

### IMPORTANT:

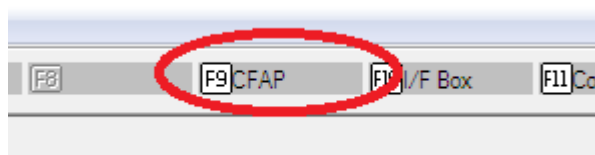
Do not insert or remove the CF card in a state in which the power of SDI is containing.

3. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.

### NOTE:

Please refer to the section "Starting Up the System".

4. Click the **F9 CFAP** button on the Function Key Bar of the main menu screen or press function key F9 of the PC.

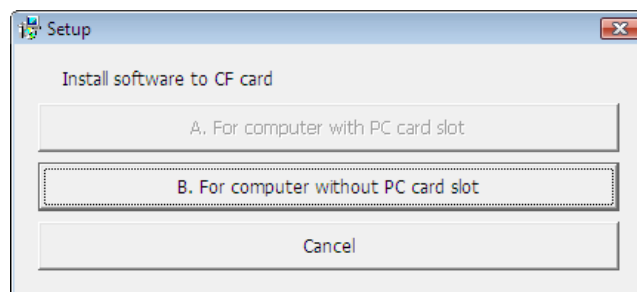


SMU-01578

### NOTE:

Please use an interface box that you use to pre-set to SDI. For the setting of the interface box, please refer to the "Selection of the interface box used" section.

5. Please select the CF application installation method to the CF card. (In this case, choose the "B. For computer without PC card slot".)

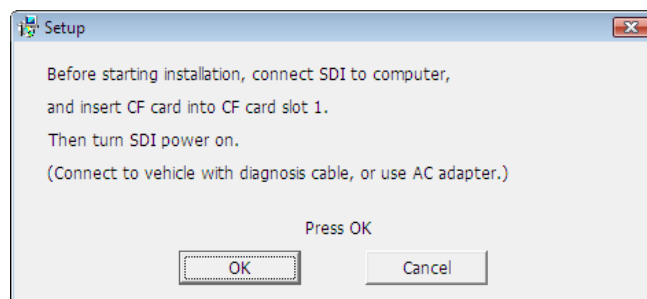


SMU-01580

### NOTE:

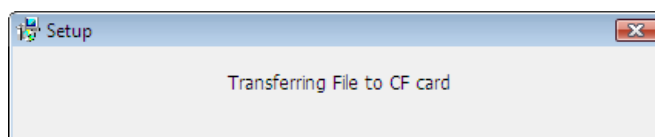
Depending on your computer's specifications, "B. For computer without PC card slot" only can not be selected.

6. You confirm mentioned contents and click [OK].



SMU-01581

7. File transfer is started. Wait for a while until it is completed.



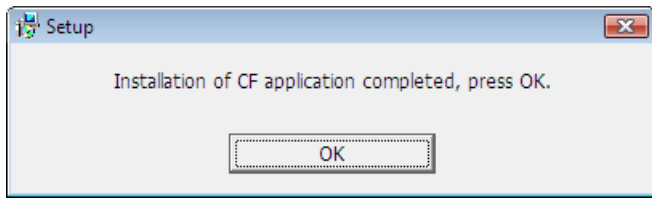
SMU-01582

### NOTE:

Transfer of files, it takes 5-10 minutes.



8. In accordance with the instructions provided, click the [OK] button.



SMU-01583

9. The installation of the CF application is complete.



## Selection of the interface box used

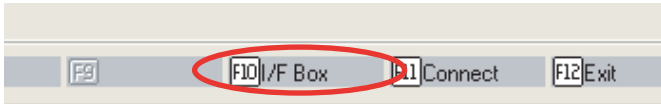
Select the interface box to use.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.

### NOTE:

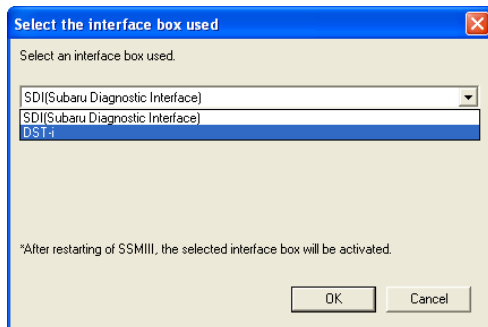
Please refer to the "Starting Up the System" section.

2. Click the **F10**/F Box button on the Function Key Bar of the main menu screen or press function key F10 of the PC.



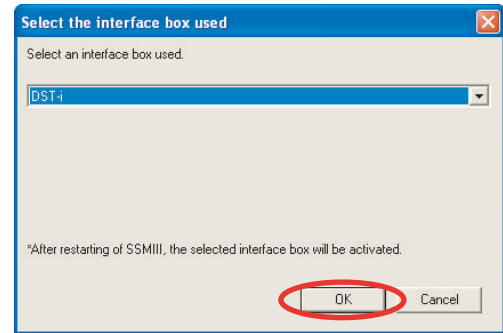
SMU-01299

3. [Select an interface box used] is displayed. You set an interface box to use. (As an example, "DST-i" is selected.)



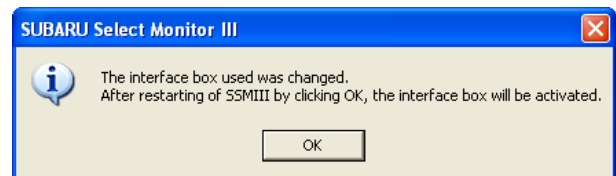
SMU-01300

4. After having confirmed setting contents, click the [OK] button.



SMU-01301

5. In accordance with the instructions provided, click the [OK] button.



SMU-01302

6. This completes the setting of interface box used.



## Switching the SDI Mode

### NOTE:

You can carry out this function only when interface box to use is SDI.

## SDI Mode Types

There are four SDI modes.

- Driving Recorder Mode
- Stand-alone Mode (CF Application Diagnosis Mode)
- System Mode (SDI System Mode)
- PC Application Mode

The following sections provide details about using each mode.

## Switching a Mode

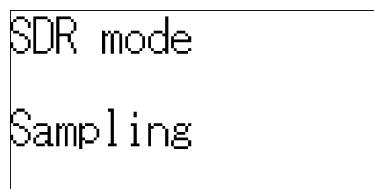
### Driving Recorder Mode

If there is SDR Setting File on the CF card, the Driving Recorder Mode is the initial default mode when SDI power is turned on. Exiting any other mode enters the Driving Recorder Mode, if there is SDR Setting File on the CF card.

### NOTE:

If there is no SDR Setting File on the CF card, the SDI enters the Stand-alone Mode. To enter the Driving Recorder Mode, please turn on the SDI after creating an SDR Setting File on the CF card.

Driving Recorder Mode Screen



SDI mode  
Sampling

SMU-00548

### Stand-alone Mode

If there is no SDR Setting File on the CF card, the Stand-alone Mode is the initial default mode when SDI power is turned on. Moreover, Exiting the System Mode or PC Application Mode enters the Stand-alone Mode.

To enter the Stand-alone Mode compulsorily, hold down both the [MENU] key and the [C] key of the SDI for at least two seconds, during the Driving Recorder Mode, or at the initial screen of the PC Application Mode.

Exiting the Stand-alone Mode, if there is SDR Setting File on the CF card, the SDI enters the Driving Recorder Mode. However, if there is no SDR Setting File on the CF card, the SDI enters the Stand-alone Mode again.

Stand-alone Mode Initial Screen



SUBARU Vehicle  
Function Setup  
Self Check  
Exit

SMU-00513

## System Mode

To enter the System Mode, hold down the SDI's [MENU] key as you turn on the SDI.

Exiting the System Mode, if there is SDR Setting File on the CF card, the SDI enters the Driving Recorder Mode. However, if there is no SDR Setting File on the CF card, the SDI enters the Stand-alone Mode.

System Mode Initial Screen



<MENU>  
SELF CHECK  
VERSION CHK  
FUNCTION SETUP  
QUIT  
GO:ENT DOWN

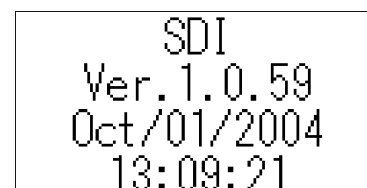
SMU-00322

## PC Application Mode

The SDI will enter the PC Application Mode automatically whenever you start up the PC application on the computer and execute various diagnostics, sampling or registration while in any other mode.

Exiting the PC Application Mode, if there is SDR Setting File on the CF card, the SDI enters the Driving Recorder Mode. However, if there is no SDR Setting File on the CF card, the SDI enters the Stand-alone Mode.

PC Application Mode Screen



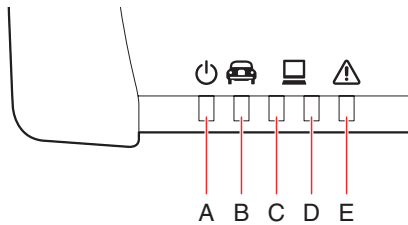
SDI  
Ver. 1.0.59  
Oct/01/2004  
13:09:21

SMU-00519



## DST-i

### LED indicator specifications of DST-i



SMU-01303

- A: Power indicator**  
Shows the status of power.  
Lights in green during power ON.
- B: Vehicle indicator**  
Shows the status of communications with the vehicle.  
Flashes in green during active communications.
- C: PC (Bluetooth) indicator**  
Shows the status of Bluetooth communications with the PC.  
Flash in blue during active communications.
- D: PC (USB) indicator**  
Shows the status of USB communications with the PC.  
Flashes in green during active communications.
- E: Error indicator**  
Lights or flashes in red when an error occurs.  
ON: Hardware / Software trouble.  
Flashes: Firmware not yet installed.

### Bluetooth communication

To connect DST-i with a PC through the Bluetooth communication function, you must install the Bluetooth driver software and execute pairing\*1 to the PC beforehand.

\*1: It prevents from communicating with an unrelated apparatus. It is work to authenticate each other to maintain security.

#### IMPORTANT:

- If you are using Bluetooth, please be sure to use a Windows standard Bluetooth driver on a computer equipped with OS of Windows XP (SP3) or

later.

You can not communicate with Windows non-standard Bluetooth drivers.

- This information does not guarantee the connection between all of commercially available Bluetooth modules and information terminals equipped with Bluetooth (e.g., PC and cellular phone).
- Use a Bluetooth module that is labeled with the Bluetooth logo mark and conforms to the Bluetooth standard 2.0.
- Total eight Bluetooth modules and information terminals having Bluetooth can execute pairing with DST-i. If ninth Bluetooth module or information terminal executes pairing, first Bluetooth module or information terminal will be cancelled.
- If disconnection of communication could cause malfunctions of vehicle or an accident, work on a PC connecting this product using the USB cable.
- When you use Bluetooth, you can not run the re-program and registration of the immobilizer. When you use these functions, please perform it by USB connection.

#### NOTE:

- You can carry out this function only when DST-i to use is model with Bluetooth.
- Bluetooth wireless technology enables to communicate in the distance up to 10 m around, but the effective communication range varies depending on obstacles (human body, metal, wall, etc.) and the condition of radio wave.

### Pairing and installation of Bluetooth driver

This section is described the setting method using the Bluetooth driver equipped as the standard of windows in Windows8, Windows 7, Windows Vista, Windows XP (after SP3).

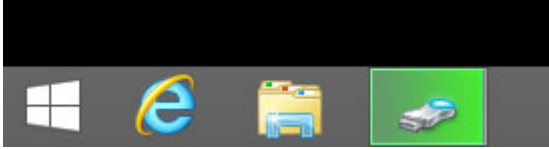
When you use the OS except the above or it becomes the use by a driver (setting tool) attached to the Bluetooth module, Please perform installation and setting according to the instruction manual of the Bluetooth module.

When you use a PC equipped with Bluetooth as standard equipment, please set it according to the instruction manual of the PC. In this case give you a pairing cord (pass key) for "0000".



## For Windows 8

1. Connect the Bluetooth module to the USB port of your PC.
2. Progress of the installation of Bluetooth drivers will be displayed in the notification area of the taskbar at the bottom left of the screen of the PC. And to start the installation. When the installation is complete, the progress of the installation will disappear.

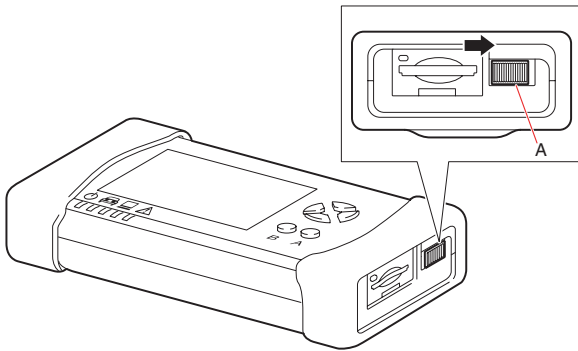


SMU-01524

### IMPORTANT:

Do not proceed to the next step until the installation is complete.

3. Connect DST-i and a PC with the USB cable.
4. Turn the mode switch of DST-i ON.



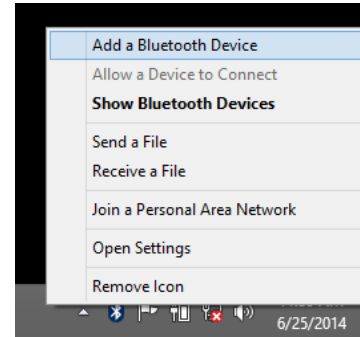
SMU-01324

A: Mode switch

### NOTE:

The mode switch is not equipped with a model without LCD. The power supply of this product is turned ON when this product is connected to a PC with the USB cable.

5. Click the Bluetooth icon  on the taskbar to select "Add a Bluetooth Device".

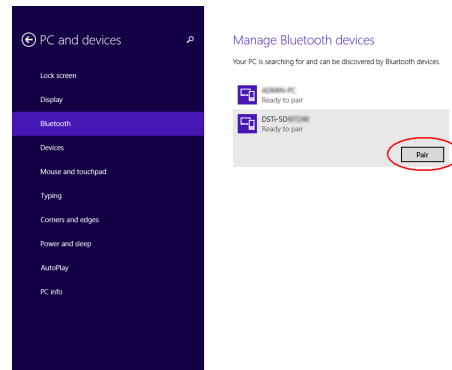


SMU-01525

### NOTE:

If the Bluetooth icon is not displayed on the taskbar, please refer to the section of [If the Bluetooth icon is not displayed on the taskbar].

6. Select "DSTi-5D\*\*\*\*\*" and click [Pair].

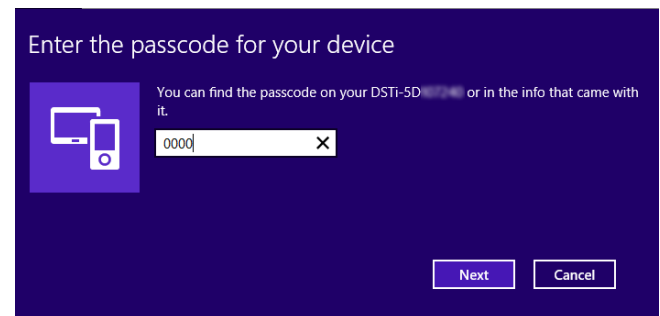


SMU-01526

### NOTE:

- \*\*\*\*\* is a serial number of DST-i.
- The serial number can be found on the back surface of DST-i.

7. Enter the pairing code "0000" and click [Next].



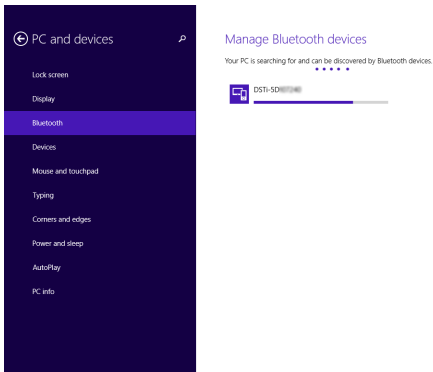
SMU-01527



**NOTE:**

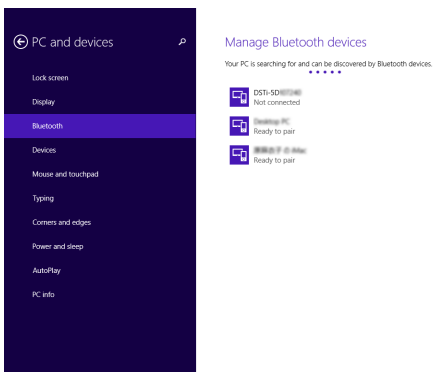
If a longer time than the prescribed time is taken for entry of pairing code, or an incorrect pairing code is entered, an error message is displayed. Click [Close] to undo the entry.

8. Pairing of the Bluetooth is initiated.  
Wait for a while until it is completed.



SMU-01528

9. Confirm applicable DST-i is added.



SMU-01529

**NOTE:**

Pairing is complete, if the "Communication port setting of Bluetooth" is not complete, you will not be able to Bluetooth communication. Refer to the "Communication port setting of Bluetooth" section, please execute the communication port settings.

**For Windows7**

1. Connect the Bluetooth module to the USB port of your PC.
2. The Bluetooth icon and a message are displayed in the taskbar notification area at the right bottom of the PC screen, and installation of the Bluetooth driver is initiated.

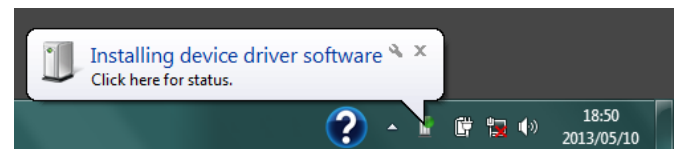
**IMPORTANT:**

Do not start the next step until the message informing of completion of installation is displayed.

**NOTE:**

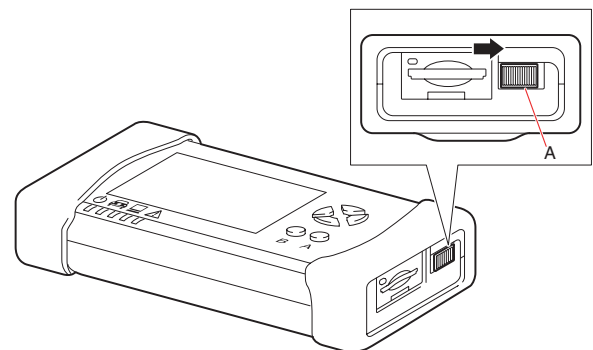
- The number of messages displayed at the right bottom of the PC screen is different depending on PCs and the Bluetooth module.
- The message at the right bottom of PC screen is displayed only for a moment so that you may not be able to confirm it.

3. At the end of installation, the message informing of completion of installation is displayed.



SMU-01457

4. Connect DST-i and a PC with the USB cable.
5. Turn the mode switch of DST-i ON.




SMU-01324

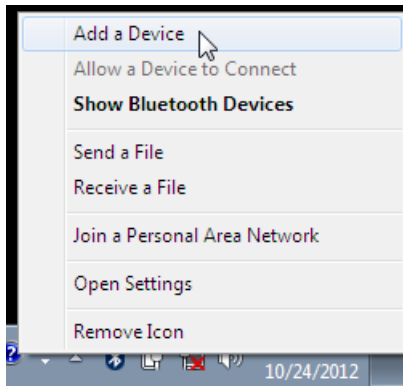
A: Mode switch



**NOTE:**

The mode switch is not equipped with a model without LCD. The power supply of this product is turned ON when this product is connected to a PC with the USB cable.

6. Right click the Bluetooth icon  on the taskbar to select "Add a Device".

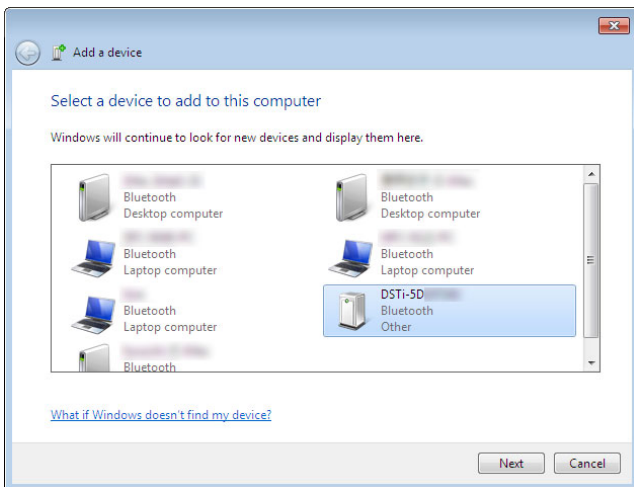


SMU-01326

**NOTE:**

If the Bluetooth icon is not displayed on the taskbar, please refer to the section of [If the Bluetooth icon is not displayed on the taskbar].

7. Select "DSTi-5D\*\*\*\*\*" and click [Next].

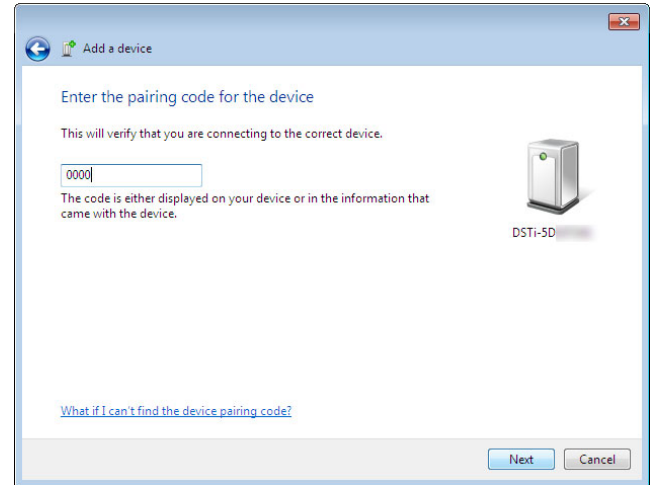


SMU-01327

**NOTE:**

- \*\*\*\*\* is a serial number of DST-i.
- The serial number can be found on the back surface of DST-i.

8. Enter the pairing code "0000" and click [Next].

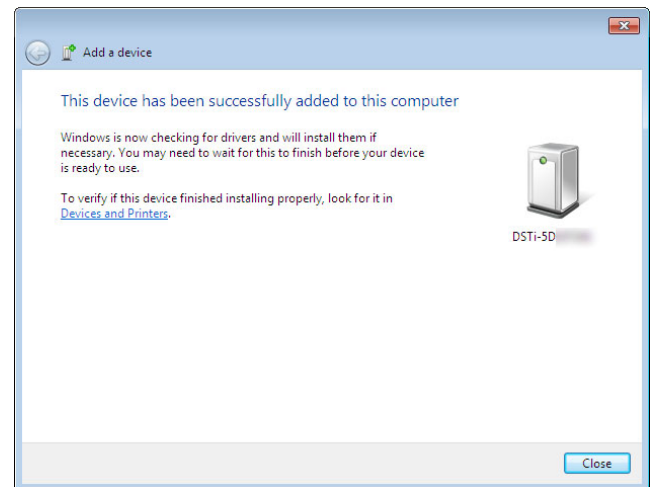


SMU-01328

**NOTE:**

If a longer time than the prescribed time is taken for entry of pairing code, or an incorrect pairing code is entered, an error message is displayed. Click [Try Again] to undo the entry.

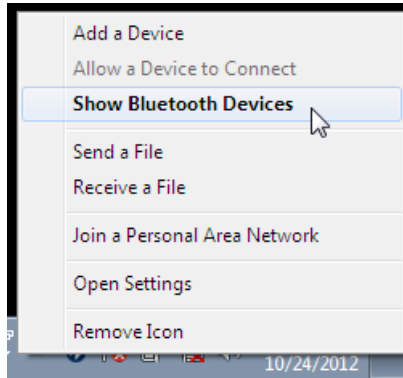
9. When the pairing is completed, the notice of completion of pairing will be shown on a PC screen.



SMU-01329

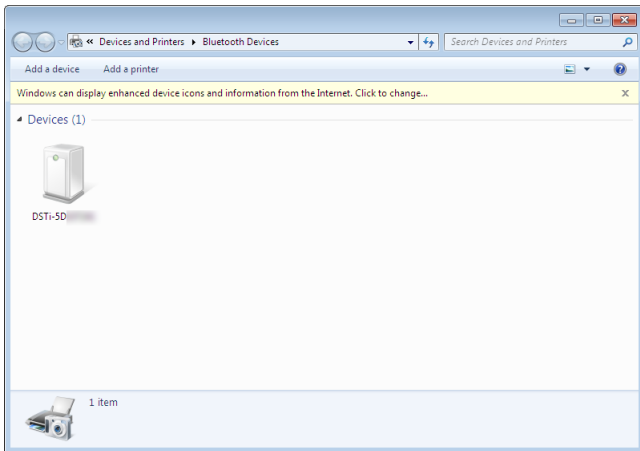


10. Right click the Bluetooth icon on the taskbar to select "Show Bluetooth Devices".



SMU-01330

11. Confirm applicable DST-i is added.



SMU-01331

### For Windows Vista, Windows XP (SP3 or later)

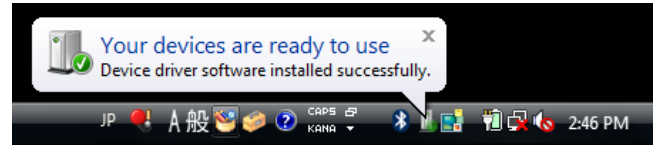
Explain the following point with a screen of Windows Vista. In the case of Windows XP, the screen display and the message is a little different.

1. Connect the Bluetooth module to the USB port of your PC.
2. The Bluetooth icon and a message are displayed in the taskbar notification area at the right bottom of the PC screen, and installation of the Bluetooth driver is initiated.

### IMPORTANT:

Do not start the next step until the message informing of completion of installation is displayed.

3. At the end of installation, the message informing of completion of installation is displayed.



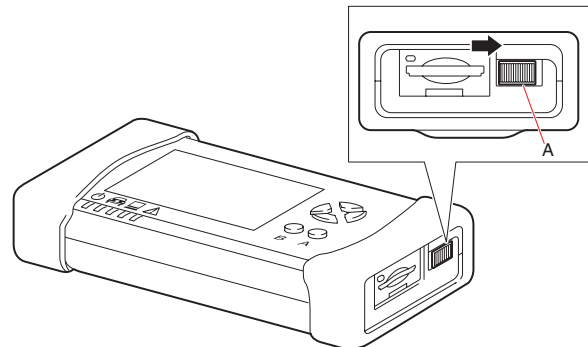
SMU-01458

### NOTE:

- The number of messages displayed at the right bottom of the PC screen is different depending on PCs and the Bluetooth module.
- The message at the right bottom of PC screen is displayed only for a moment so that you may not be able to confirm it.

4. Connect DST-i and a PC with the USB cable.

5. Turn the mode switch of DST-i ON.



SMU-01324

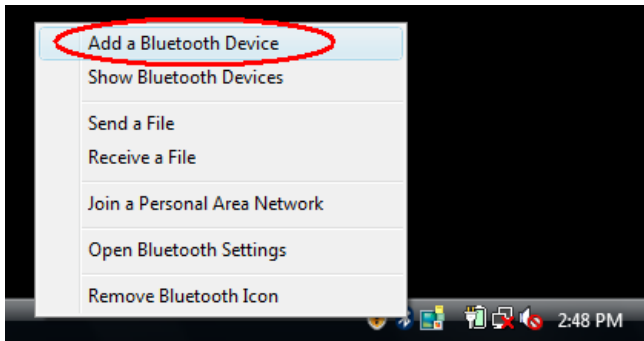
A: Mode switch

### NOTE:

The mode switch is not equipped with a model without LCD. The power supply of this product is turned ON when this product is connected to a PC with the USB cable.



6. Right click the Bluetooth icon on the taskbar to select "Add a Bluetooth Device".



SMU-01459

**NOTE:**

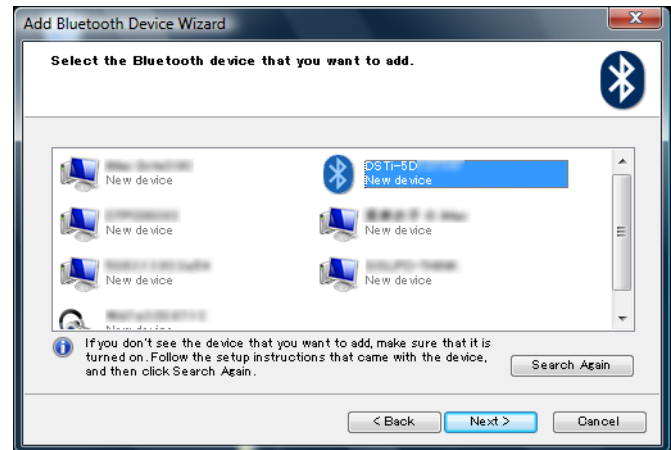
If the Bluetooth icon is not displayed on the taskbar, please refer to the section of [If the Bluetooth icon is not displayed on the taskbar].

7. Check into a box of "My device is set up and ready to be found." and click [Next].



SMU-01460

8. Select "DSTi-5D\*\*\*\*\*" and click [Next].

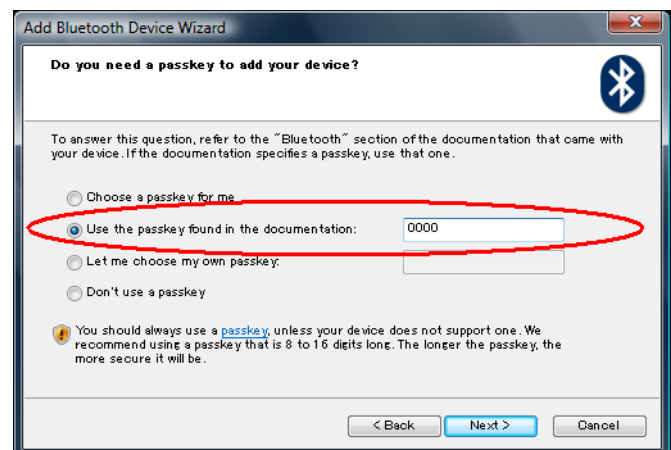


SMU-01461

**NOTE:**

- \*\*\*\*\* is a serial number of DST-i.
- The serial number can be found on the back surface of DST-i.

9. Select "Use the passkey found in the documentation:" . Enter the pass key "0000" and click [Next].



SMU-01462

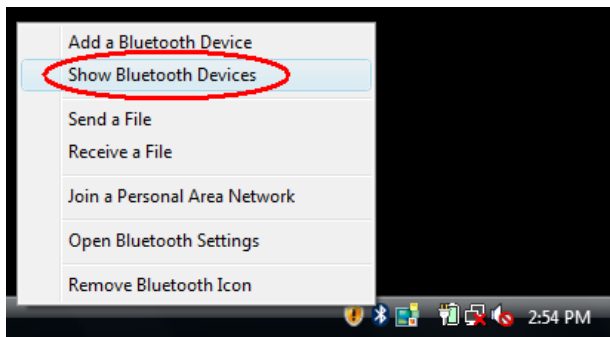


10. When the pairing is completed, the notice of completion of pairing will be shown on a PC screen. Click [Finish]



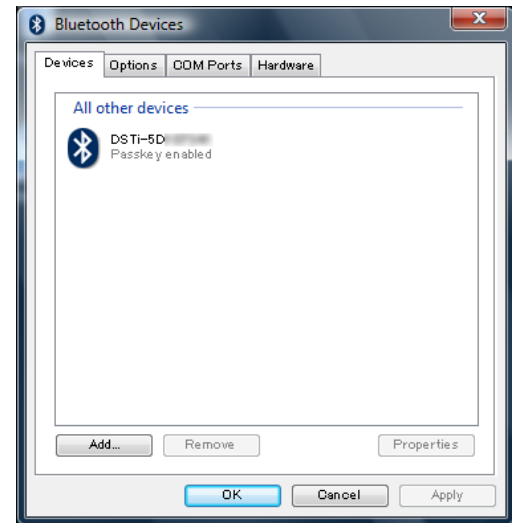
SMU-01463

11. Right click the Bluetooth icon on the taskbar to select "Show Bluetooth Devices".



SMU-01464

12. Confirm applicable DST-i is added.




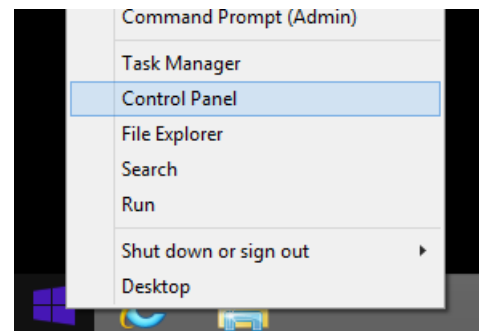
SMU-01465

**If the Bluetooth icon is not displayed on the taskbar**

**For Windows 8**

1. You display the desktop screen.

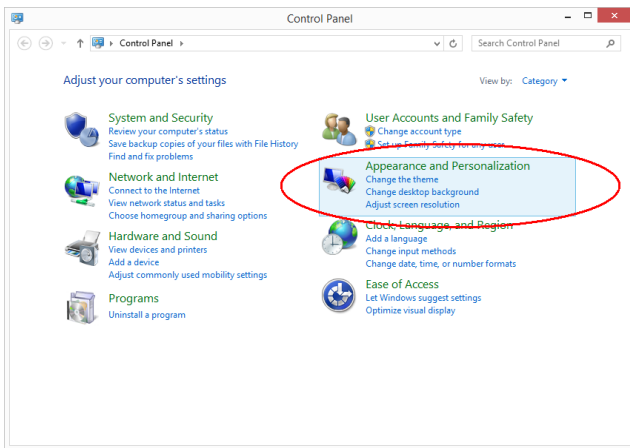
Right-click the Start button  on the bottom left of the screen, and then select "Control Panel".



SMU-01531



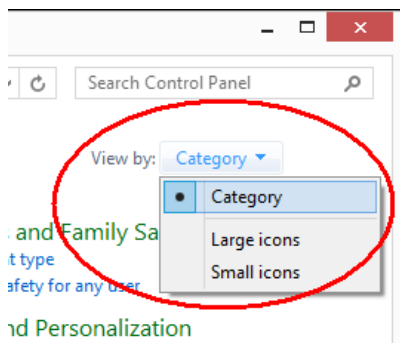
## 2. Select "Appearance and Personalization".



SMU-01532

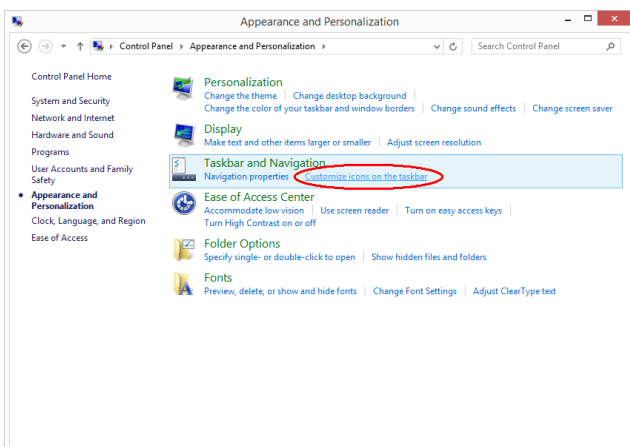
### NOTE:

If the "Appearance and Personalization" is not displayed, please set to "Category" an item in the "View by" to the right of the screen.



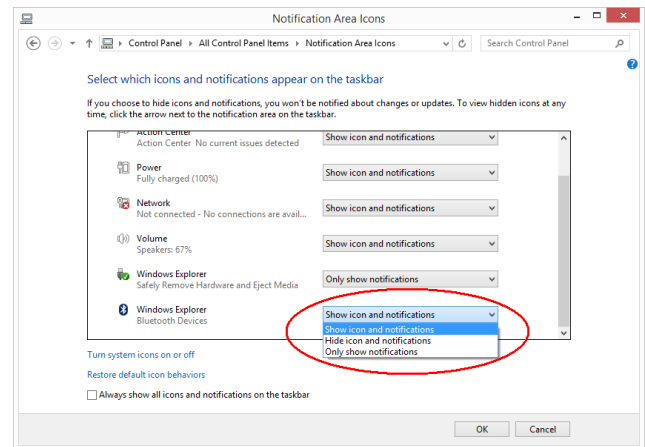
SMU-01533

## 3. Select "Customize icons on the taskbar".



SMU-01534

## 4. Changed to "Show icon and notifications" the display status of Bluetooth icon. And then you click the "OK" button.



SMU-01535

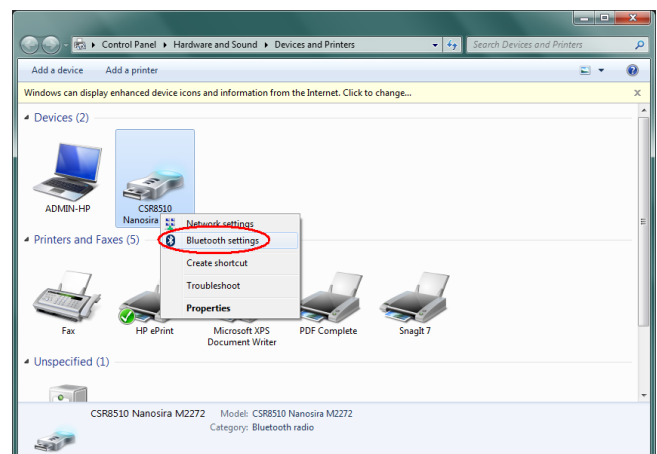
## 5. The Bluetooth icon is displayed on the taskbar.



SMU-01536

### For Windows 7

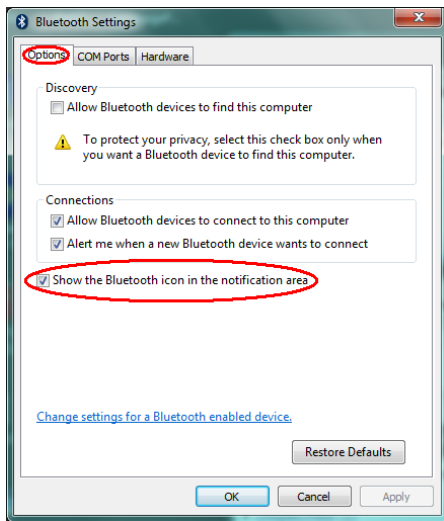
## 1. Select "Devices and Printers" from Start menu, right click on the icon of the Bluetooth module to select "Bluetooth settings".



SMU-01466



2. Check the check box of "Show the Bluetooth icon in the notification area".  
Then click "OK".



SMU-01467

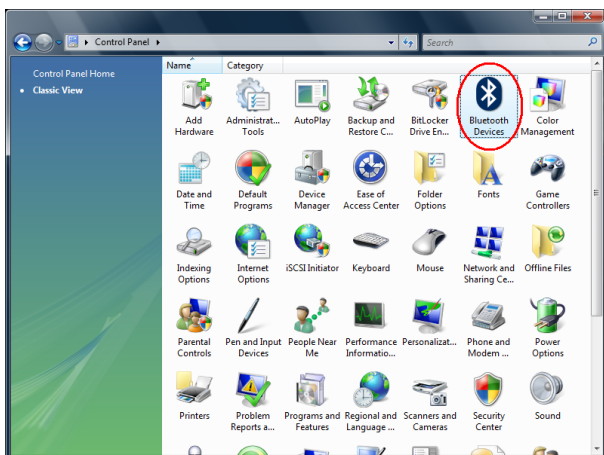
3. The Bluetooth icon is displayed on the taskbar.



SMU-01468

### For Windows Vista, Windows XP (SP3 or later)

1. Select "Control panel" from Start menu and double click the Bluetooth module icon.

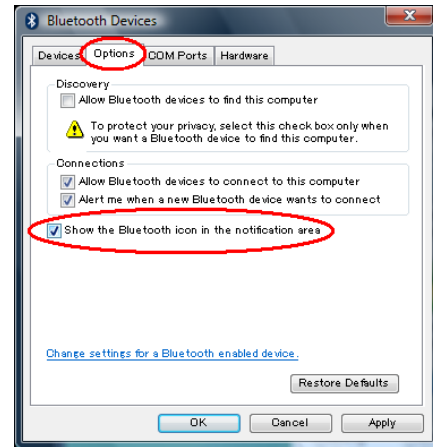


SMU-01469

### NOTE:

If the Bluetooth icon is not displayed on the taskbar, please select to "Classic View" in the menu on the left side of the screen.

2. In "Option" tab, check the check box of "Show the Bluetooth icon in the notification area".  
Then click "OK".



SMU-01470

3. The Bluetooth icon is displayed on the taskbar.




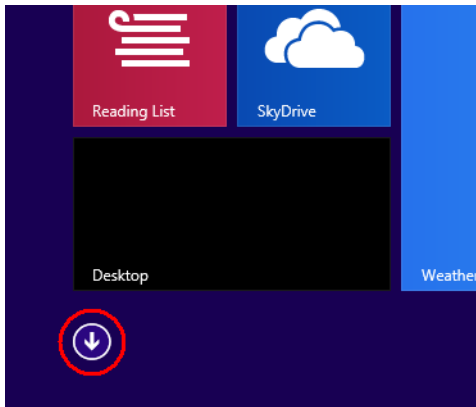
SMU-01471



## Communication port setting of Bluetooth

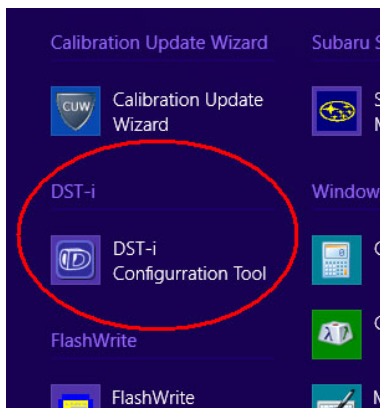
### For Windows 8

1. Click the  button at lower left of the start screen.



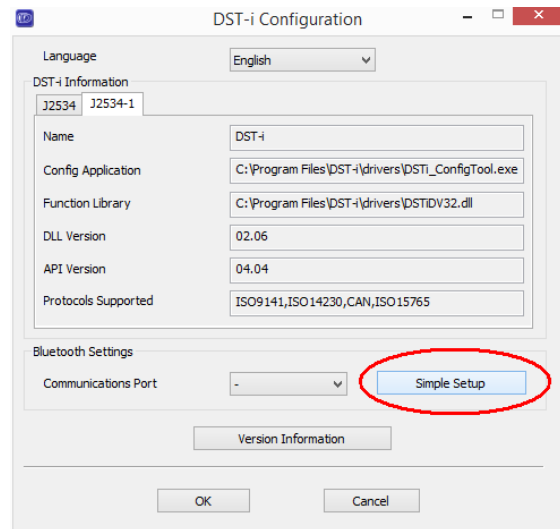
SMU-01538

2. Click the "DST-I Configuration Tool" in the Apps screen.



SMU-01539

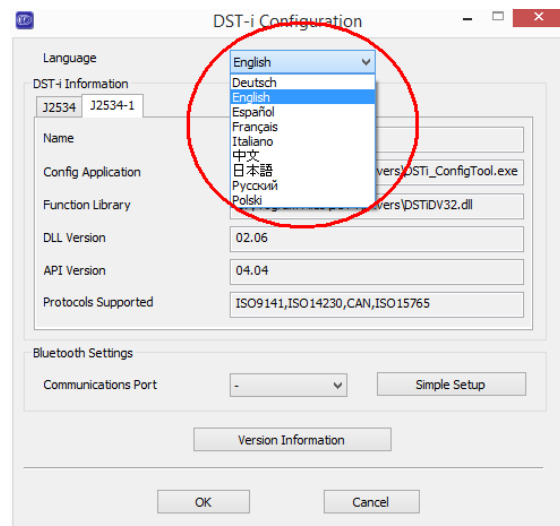
3. Click [Simple Setup].



SMU-01540

### NOTE:

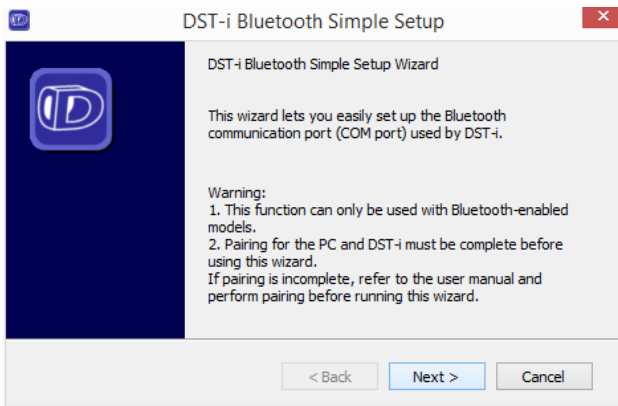
You can select the language if necessary.



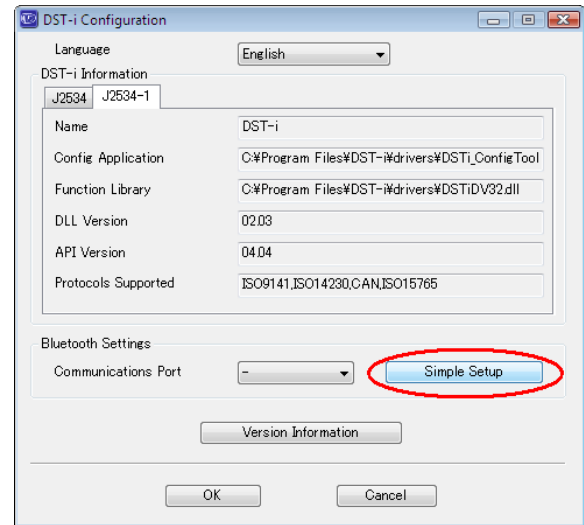
SMU-01541



4. [Simple Setup] Wizard starts. The following steps, please refer to the "DST-i Bluetooth Simple Setup" section.



SMU-01542

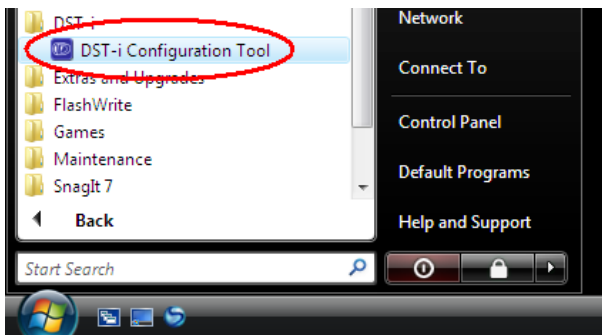


SMU-01474

### For Windows 7, Windows Vista, Windows XP (SP3 or later)

How to use the following, will explain the screen in Windows 7. If you are using Windows XP (SP3 or Later) or Windows Vista, screens and messages are slightly different.

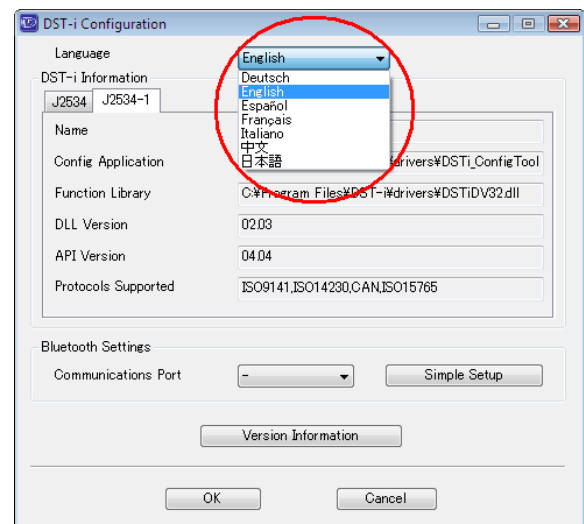
1. From the Start Menu, you start the next menu. "All Programs" → "DST-i" → "DST-i Configuration Tool"



SMU-01472

### NOTE:

You can select the language if necessary.

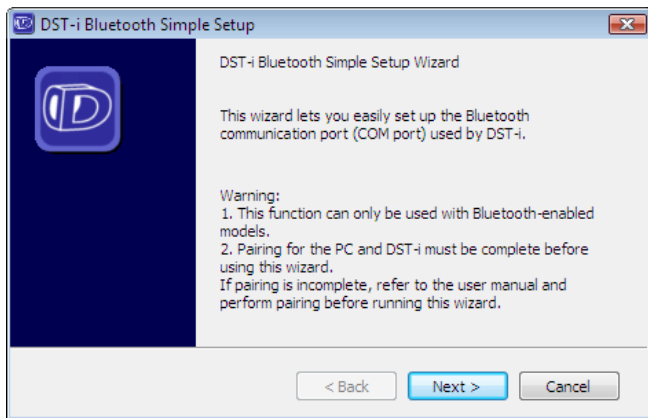


SMU-01473

2. Click [Simple Setup].



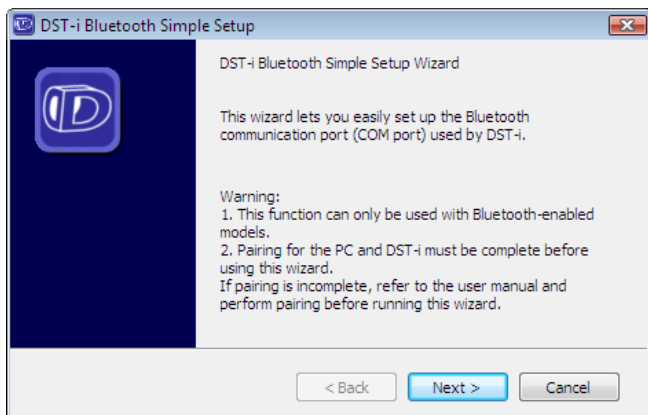
3. [Simple Setup] Wizard starts. The following steps, please refer to the "DST-i Bluetooth simple setup" section.



SMU-01475

### DST-i Bluetooth Simple Setup

1. You confirm mention contents and click [Next].

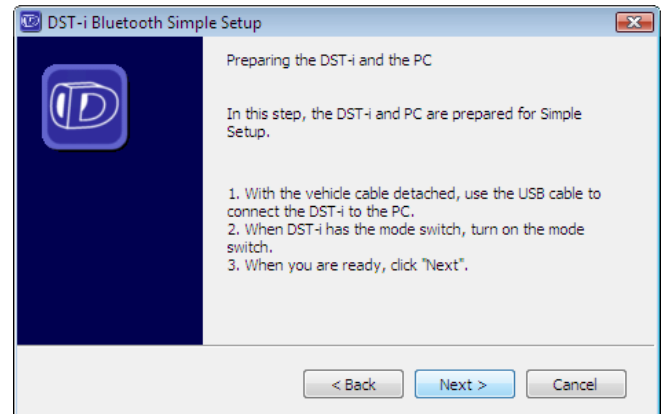


SMU-01475

2. If DST-i and the preparations screen of the PC are displayed, you make the following preparations.

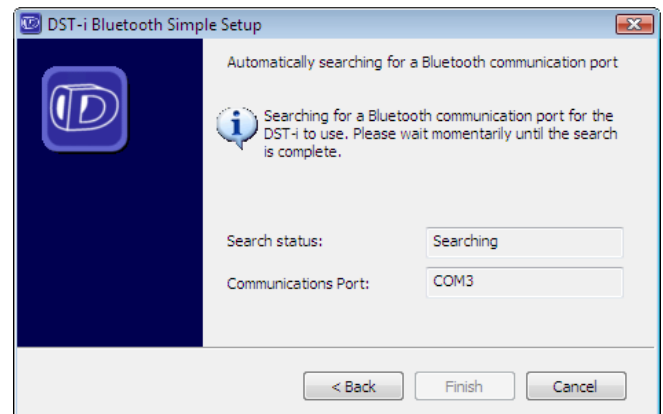
- Take off a cable for vehicle connection. Connect DST-i to a PC with a USB cable.
- Turn on a mode switch of DST-i. When DST-i has already started, please turn off a mode switch. Please reboot afterwards.

After having been ready, click [Next].



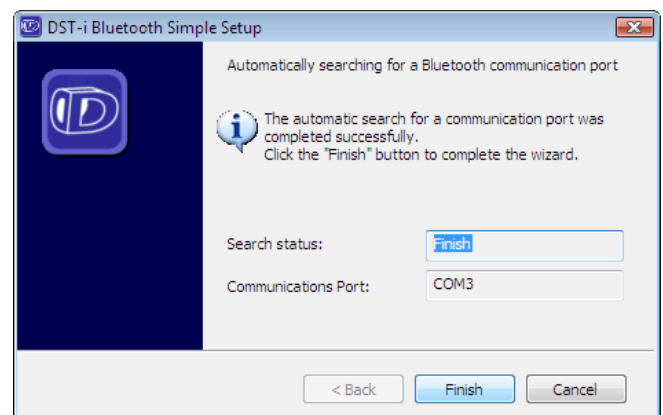
SMU-01476

3. An automatic search of the Bluetooth COM port begins. Wait for a while until it is completed.



SMU-01477

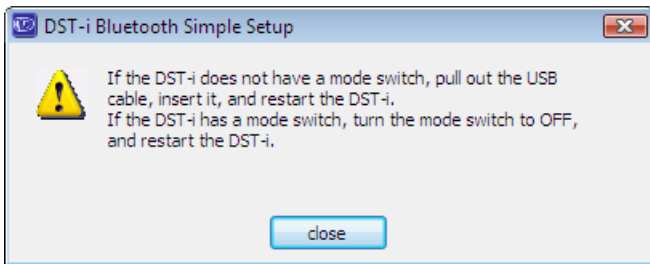
4. After a completion screen of the automatic detection of the Bluetooth COM port was displayed, you confirm a port number listed in the COM port. Click [Finish].



SMU-01478

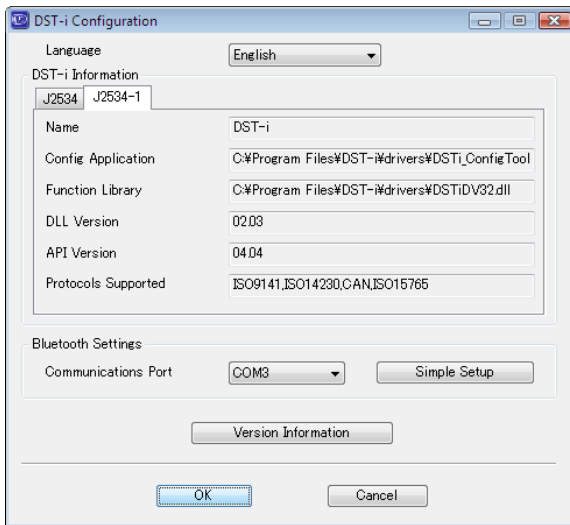


5. After instructions dialogue switching on DST-i again was displayed, Turn off a mode switch of DST-i. Turn on a mode switch afterwards.



SMU-01479

6. You confirm that a communication port of the Bluetooth setting is changed. Click [OK].



SMU-01480

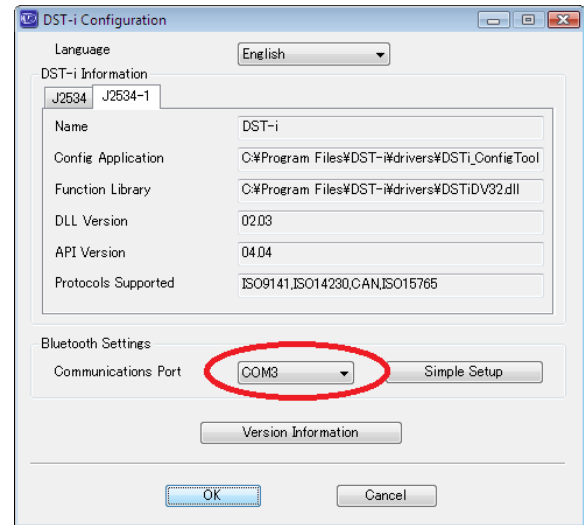
#### IMPORTANT:

When it is finished without click [OK], the setting is not reflected.

#### NOTE:

If you change the communication port of the Bluetooth settings, you need to re-set the communication port.

In that case, please try the "DST-i Bluetooth Easy Setup".



SMU-01577

**A confirmation item and necessary measures when a problem occurred at the time of DST-i use**

#### When cannot communicate with vehicle

Confirmation item	Action Required
Problem with the connection of Datalink Cable	Please make sure if the Datalink Cable is connected securely.
Problem with the connector pin of Datalink Cable (e.g. deformation)	Please make a repair request to the shop which you purchased.
Problem with the Datalink Cable itself (e.g. cable disconnection)	Please replace with the new Datalink Cable.
Indication of the update screen of DST-i	Click [OK] or [Next], and please update it.
Others than the above	Please contact SUBARU CORPORATION Subaru customer center, Technical service department, diagnosis system charge.



## When cannot communicate with PC

Confirmation item	Action Required
Problem with the connection of USB cable	Please make sure if the USB cable is connected securely.
Problem with the USB driver	Please reinstall the USB driver.
Problem with the USB port on PC side	Please change the USB port.
Problem with the USB cable itself (e.g. cable disconnection)	Please replace with the new USB cable.
Confirmation of the interface box	Refer to "Selection of the interface box used". Interface box to use settings, please to DST-i.
Others than the above	Please contact SUBARU CORPORATION Subaru customer center, Technical service department, diagnosis system charge.

## When Error detection indicator turns on or it flashes on and off

Confirmation item	Action Required
Restart of DST-i	Disconnect USB cable and Datalink cable, Please restart DST-i.
When even if a power supply restart, an error detection indicator turns on or it flashes on and off	Please contact SUBARU CORPORATION Subaru customer center, Technical service department, diagnosis system charge.

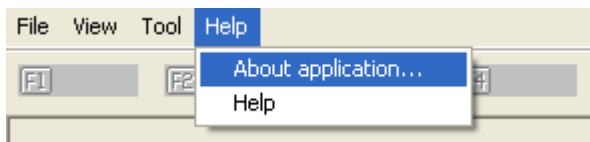


## Display Software Version Information

To display software version of PC application and CF application, perform the following procedure.

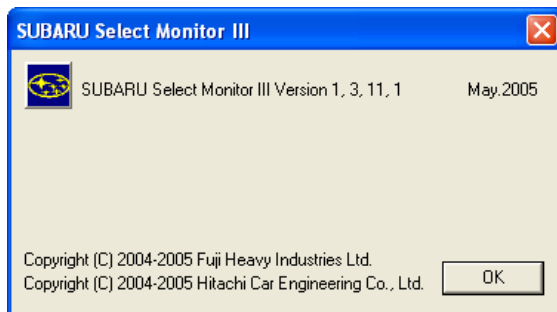
### PC Application Version Information

1. Double-click the SS-MIII icon on the PC screen to start up the application.
2. Select "About application" from "Help" in menu.



SMU-00810

3. This displays version information as shown below.



SMU-00811

#### NOTE:

- To confirm version information, it is not necessary to connect a PC to vehicle. The version information can be displayed on a PC alone.
- In High-Grade Roughness Monitor sampling screen, the version information of Roughness Monitor will be displayed.
- To confirm the functions supported in displayed version (for software currently installed), see "SS-MIII revision history".

### CF Application Version Information

1. Turn on the SDI.
2. The version information shown below is displayed few seconds before Initial Menu screen of Stand-alone Diagnosis is displayed.



SMU-00812

#### NOTE:

In case that the SDI operates as a Driving Recorder Mode, please shift it to a Stand-alone Mode by hold down both the [MENU] key and the [C] key of the SDI for at least two seconds.



## Starting Up the System

With the SSMIII, the PC application communicates via the interface box with the control modules for which SSMIII diagnosis is supported. In order to enable normal communication, start up the SSMIII using the procedure described below.

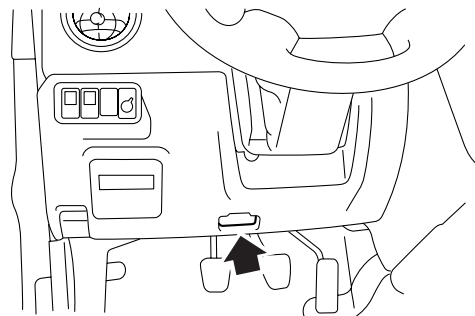
### NOTE:

- Power from the vehicle's battery is supplied to the interface box via the fault diagnostic cable or datalink cable.
- If you use the SSMIII when the vehicle's battery is low, then a communication error may occur when the engine is started. This is caused by a drop in the voltage as a large current flows to the starter motor, because the interface box stops operating. If this happens do the following.
  1. To continue testing for faults after starting the engine, after starting the engine press the [PWR] key on the SDI to turn on the power, then restart the SSMIII operation.
  2. To do fault diagnosis while the engine is running, charge the battery completely before doing the fault diagnosis.
- If the PC has more than one USB port, the PC USB port where the interface box is connected when you install the USB driver will become the special SSMIII port. Whenever using the SSMIII, always connect the USB cable to the special SSMIII port only.
- A message may appear during system startup instructing you to update the PC application. If it does, install the newest version of the PC application as soon as possible.
- SDI power will turn off automatically if you leave the diagnosis cable connected to the SDI and do not perform any operation on the PC for a certain period. This is indicated when the PWR LED of the SDI goes out. If this happens, press the SDI [PWR] key to turn it back on again.

1. Prepare the interface box, USB cable, PC with the SSMIII application installed, diagnosis cable or datalink cable.
2. Use the diagnosis cable or datalink cable to connect the interface box to the datalink connector of the vehicle.

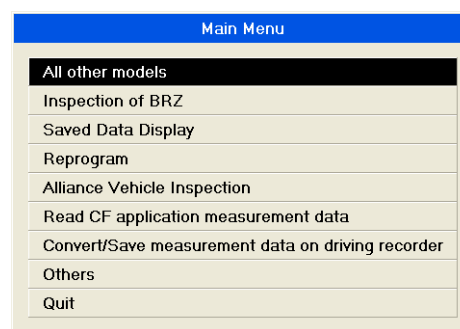
### NOTE:

Interface box power will turn on automatically when the diagnosis cable is connected to the vehicle. If the PWR LED of the SDI does not light, turn on the vehicle's ignition switch or start the engine, and then press the SDI [PWR] key and check again to see if the PWR LED of the SDI lights.



SMU-00113

3. Use the USB cable to connect the interface box to the PC.
4. Turn on the vehicle's ignition switch.
5. Double-click the SSMIII icon on the PC screen to start up the application. This causes the Main Menu to appear.



SMU-01294

### NOTE:

By the interface to be connected, different display menu.

## Main Menu Items

Explanations of each of the Main Menu items are provided below. Select the item you want on the Main Menu to perform fault diagnostic word, to configure settings, and to perform other tasks.



## All System Diagnosis

Selecting this item displays on a single screen the fault detect status of all control system control modules for which SSMMIII diagnosis is supported, and memorized diagnostic codes.

## Each System Check

Selecting this item makes it possible to select a particular system from among the control systems for which SSMMIII diagnosis is supported, and perform fault diagnosis.

This item can be used to view input/output data of the system control modules that perform fault diagnosis, memorized diagnostic codes, and other data on the PC display.

This menu item is also used after repair work is complete to delete diagnostic codes, to configure control module settings, etc.

## Saved Data Display

This item can be used to save various data sampled during fault diagnosis operations, and to load data for viewing after work is complete.

## Immobilizer

This item performs immobilizer registration.

## Reprogram

This item performs reprogramming of the control module.

## Read CF application measurement data

This item performs reading stand alone measurement data saved in a CF card to hard disk of your PC.

### NOTE:

You can carry out this function only when interface box to use is SDI.

## Convert/Save measurement data on driving recorder

Loads data sampled on the driving recorder to the PC from the CF card, and converts and saves that data.

## Oscilloscope


After attaching the optional pulse/analog cartridge to SDI, connect the pulse/analog box to the SDI and using pulse/analog probe to perform analog sampling.

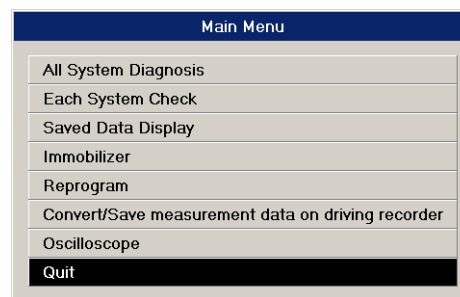
### NOTE:

You can carry out this function only when interface box to use is SDI.

## Quitting the System

1. On the Main Menu, select [Quit] and then press the Enter key or left-click with the mouse.

You can also quit the system by selecting [Quit] on the [File] menu, by clicking the  button on the function Key Bar, or by pressing the F12 function key on the PC keyboard.



SMU-00568

2. Confirm that the PC application is no longer running, and turn off the vehicle ignition key.
3. Disconnect the diagnosis cable from the vehicle data link connector. The interface box is turned off when the diagnosis cable is disconnected.

### NOTE:

The SDI can also be turned off by holding down both the [MENU] key and the [DOWN] key of the SDI for at least two seconds.



4. Disconnect the USB cable and the diagnosis cable or datalink cable from the PC and interface box.

**NOTE:**

The PC application settings listed below are remembered whenever the system is exited. These settings are automatically restored the next time the PC application is started up.

- Display order of Digital Data Screen and Graph Screen items
- Display cell width settings
- Data select function setting items
- Graph Screen range settings
- Graph Screen graph line colors and thicknesses
- Display language
- Display unit settings
- Display font settings
- Print settings



## Wireless LAN Communication

The normal communication method (connection method) between PC and SDI is by USB cable, but when a wireless LAN card is used, wireless LAN communication without a USB cable is possible.

This chapter explains the setting method for wireless LAN communication when the following environment is used.

### NOTE:

You can carry out this function only when interface box to use is SDI.

<Use environment>

OS: Windows Vista, Windows XP or Windows 2000

Wireless LAN: PC built-in or external type (PC card slot)

## Caution items

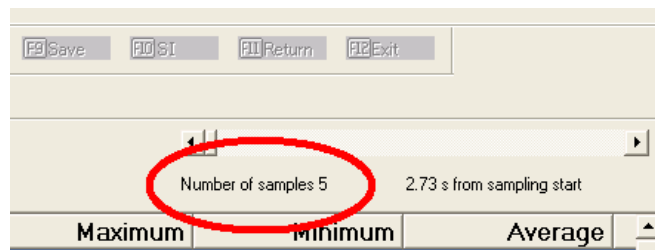
- When a wireless LAN is used, immobilizer registration, reprogramming, CF application installation, and SDI firmware updating cannot be done. Use a USB connection for execution of these functions. (The illustration is an example for updating the SDI firmware.)



SMU-00993

- Switch off the SDI power supply before inserting or removing a wireless LAN card. When a wireless LAN card is inserted or removed while the SDI power is switched on, the inside of the wireless LAN card may become damaged.

- As wireless LAN communication is communication by radio waves, the communication status deteriorates when the communication distance between PC and SDI increases. The confirmation status can be confirmed with the "NET" lamp of the PC wireless LAN card or the "Number of samples" of the sampling status bar. If the communication status has become bad, reduce the distance between PC and SDI to improve the communication status. The system configuration is so that data measuring is possible even when the communication status has deteriorated and the sampling number is not displayed continuously, but when the communication status deteriorates extremely, communication errors may occur. (However, data display is not possible when the communication has been cut completely.)



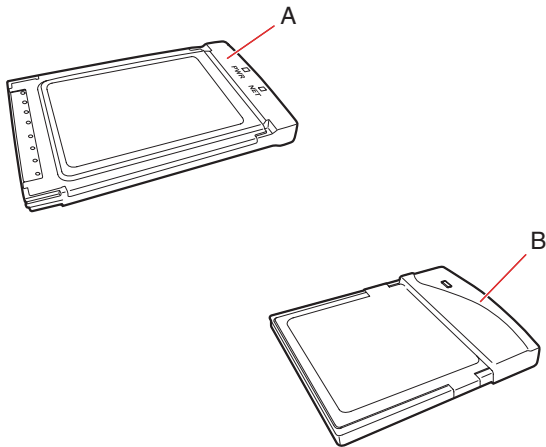
SMU-00982

- Do not use a wireless LAN in countries not shown in the following list, as approval according to the radio law has not been obtained.

Australia	Japan
Bulgaria	Malta
Canada	Netherlands
Chile	New Zealand
China	Norway
Cyprus	Poland
Czech	Portugal
France	Saudi Arabia
Germany	Singapore
Greece	Spain
Guam	Sweden
Hawaii	Switzerland
Iceland	Taiwan
Ireland	Turkey
Israel	U. K.
Italy	USA



## Parts required for wireless LAN communication



SMU-01023

A: PC with built-in wireless LAN or external wireless LAN

B: Wireless LAN card for SDI

### NOTE:

A CD-ROM is enclosed with the wireless LAN card for SDI, but it is not used. SDI requires no driver installation.

## Outline of the wireless LAN connection procedure

Explanations are provided for Windows XP and Windows Vista.

1. Set the PC side to wireless LAN.
2. Set the SDI side to wireless LAN.
3. Switch the SDI connection method from USB to wireless LAN.

### NOTE:

In case of Windows 2000, use your wireless LAN utility and perform setting for wireless LAN communication.

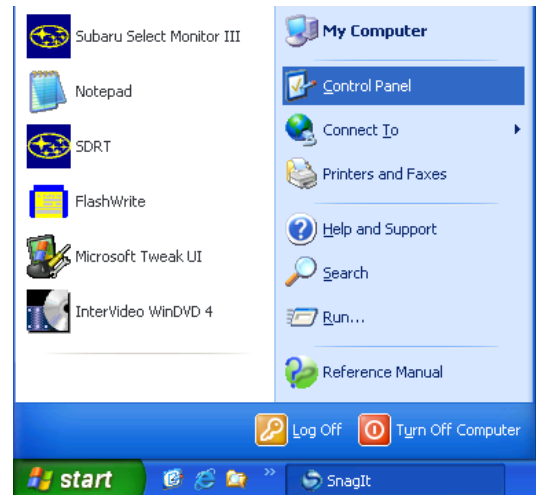
## Wireless LAN setting on the PC side

Explanations are provided for Windows XP and Windows Vista.

In case of an external type, connect the wireless LAN card and install the driver on the PC.

## For Windows XP

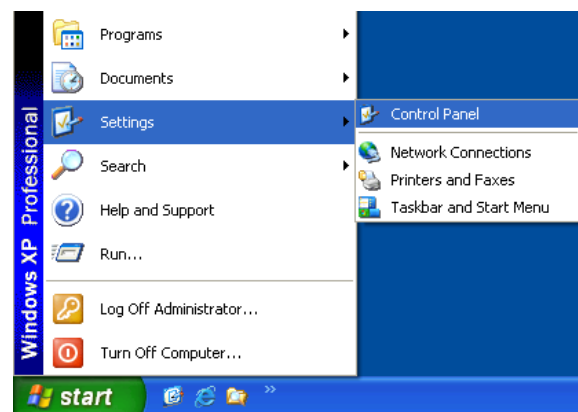
1. Click "Start" on the taskbar and select "Control Panel".



SMU-00983

### NOTE:

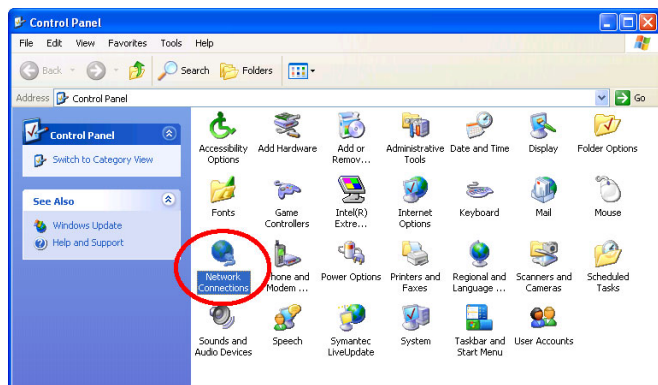
Depending on the PC display settings, click "Start" and select "Control Panel" from "Settings".



SMU-00984



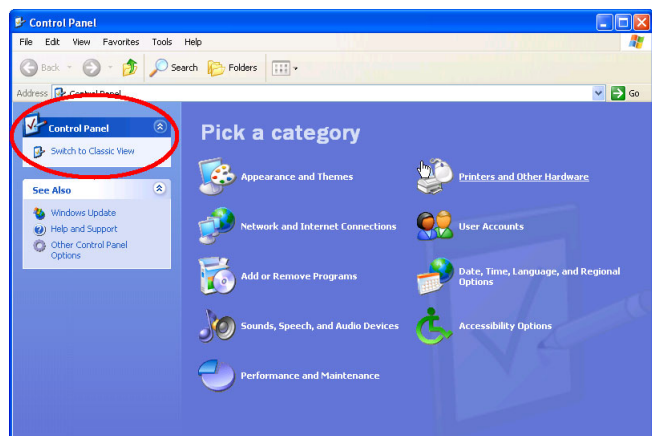
2. The control panel is displayed. Double-click “Network Connections”.



SMU-00985

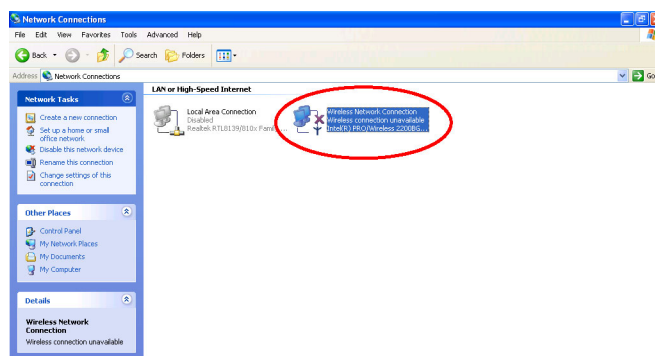
#### NOTE:

Depending on the display settings of the PC, there may be no “Network Connections”. In this case, click “Switch to Classic View” to switch the screen display.



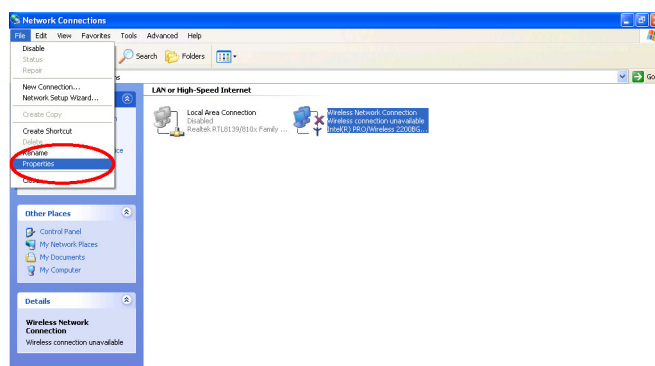
SMU-00986

3. The screen “Network Connections” is displayed. Select “Wireless Network Connections”.



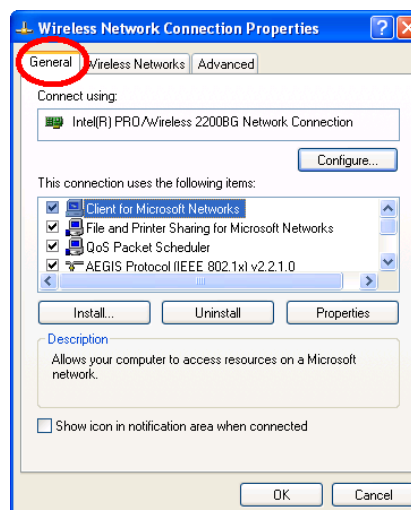
SMU-00987

4. Select “Properties” from “File” in the menu.



SMU-00988

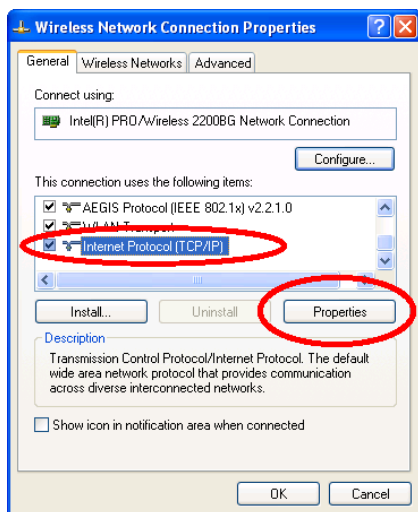
5. The screen “Wireless Network Connection Properties” is displayed. Select “General”.



SMU-00989

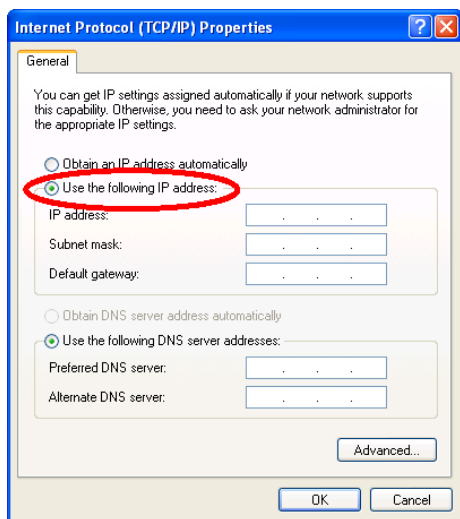


6. Select “Internet Protocol (TCP/IP)” and click the “Properties” button.



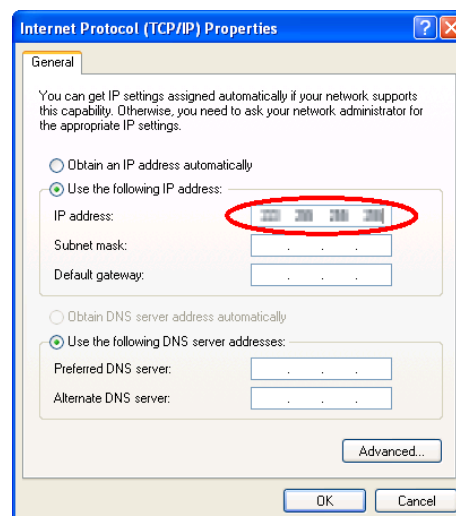
SMU-00990

7. Check “Use the following IP address:”.



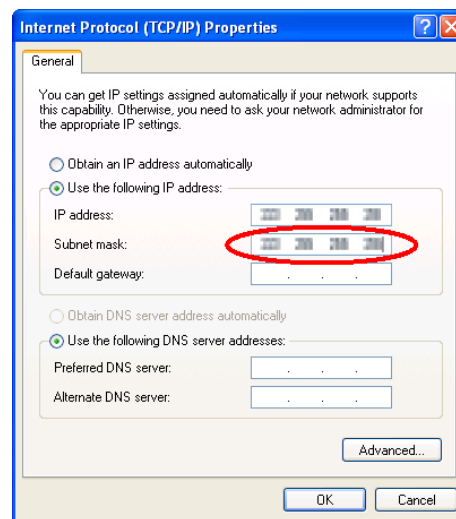
SMU-00991

8. Enter the address to “IP address”. Refer to “SS-MIII wireless LAN communication” enclosed with the SDI wireless LAN card for the characters to be entered.



SMU-00992

9. Enter numbers for “Subnet mask”. Refer to “SS-MIII wireless LAN communication” enclosed with the SDI wireless LAN card for the characters to be entered.

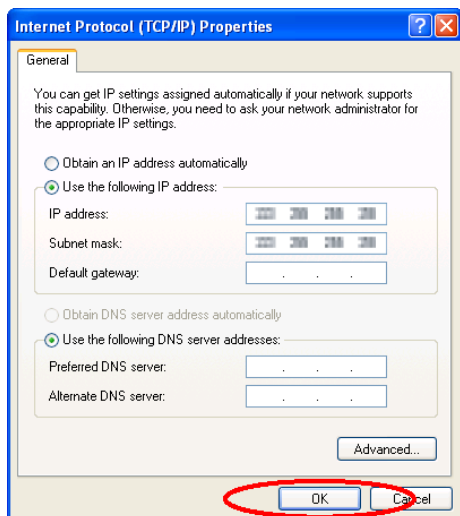


SMU-00994

10. Do not enter anything for “Default gateway” and leave the field blank.
11. Do not enter anything for “Preferred DNS server” and “Alternate DNS server” and leave the fields blank.

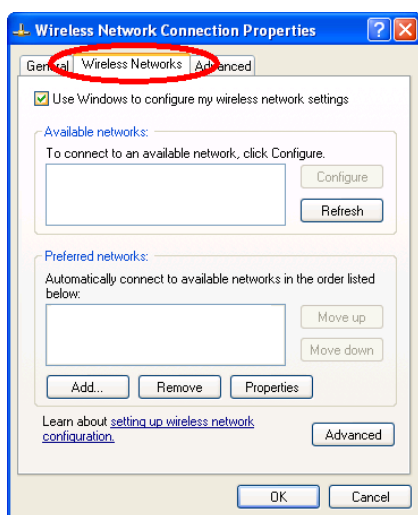


12. After confirmation of the entered setting contents, click the button [OK] and close the window.



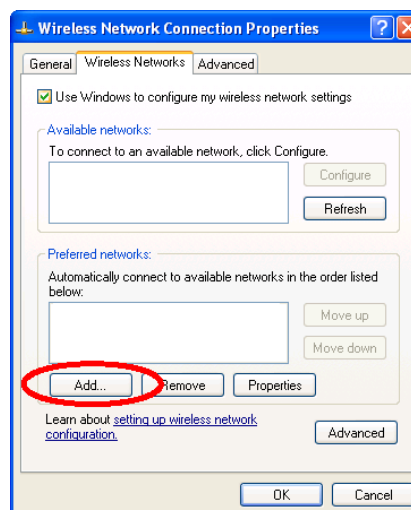
SMU-00995

13. Select the tab "Wireless Networks".



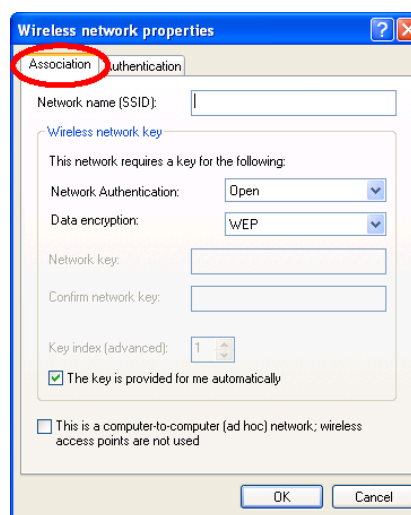
SMU-00996

14. Click the button "Add...".



SMU-00997

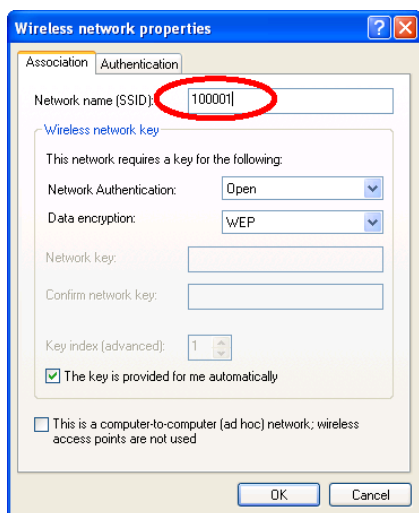
15. The screen "Wireless Network Properties" is displayed. Select the tab "Association".



SMU-00998

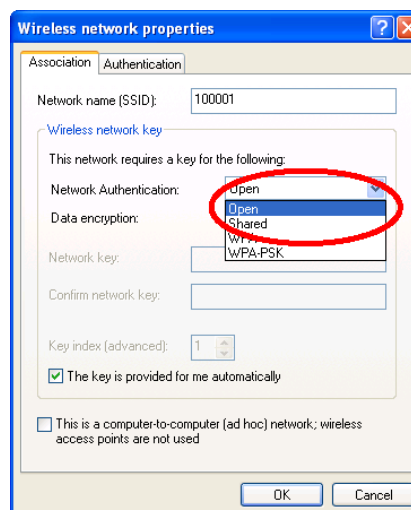


16. Enter the production number of the communication SDI in "Network Name (SSID)". (Here, "100001" is entered as an example.)



SMU-00999

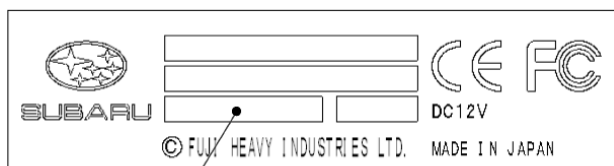
17. Select "Open" for "Network Authentication".



SMU-01001

#### NOTE:

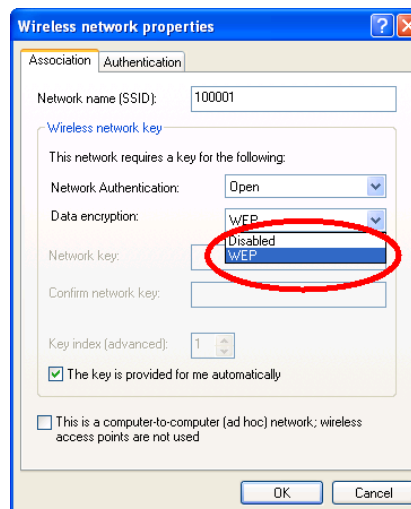
The SDI Production Number is shown on the seal on the side of the SDI.



**Production Number**

SMU-01000

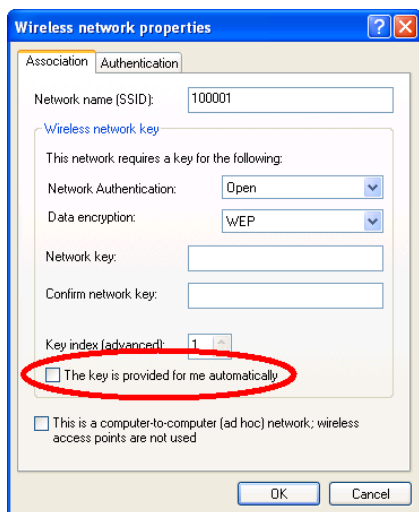
18. Select "WEP" for "Data encryption".



SMU-01002

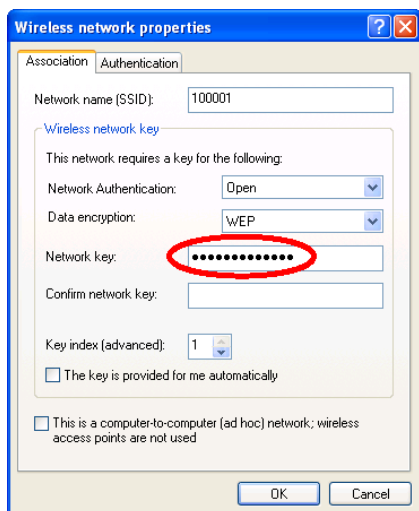


19. Uncheck "The key is provided for me automatically".



SMU-01003

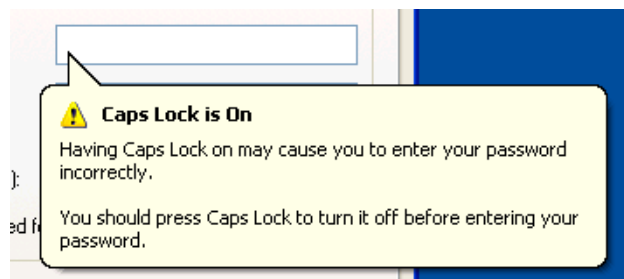
20. Enter an encryption key (alphanumeric) for "Network key". Refer to "SSMIII wireless LAN communication" enclosed with the SDI wireless LAN card for the characters to be entered.



SMU-01004

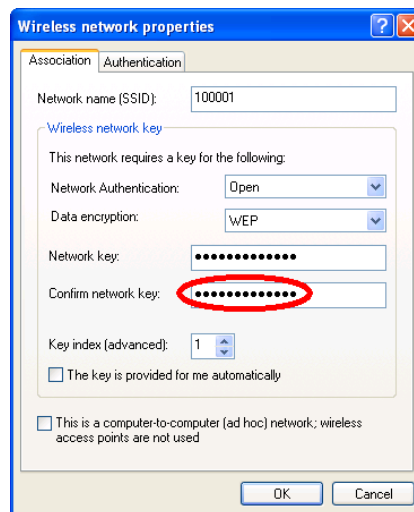
#### NOTE:

Enter the network keys using lower case letters. In case of input in "Caps Lock" status (upper case letters), a warning message is displayed.



SMU-01005

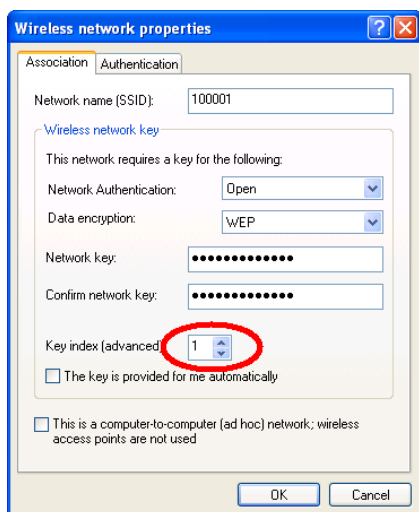
21. Enter the same characters as for "Network key" also for "Confirm network key".



SMU-01006

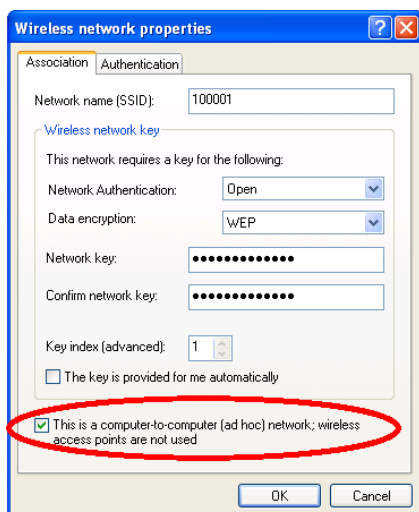


22. Set "1" for "Key index (advanced)".



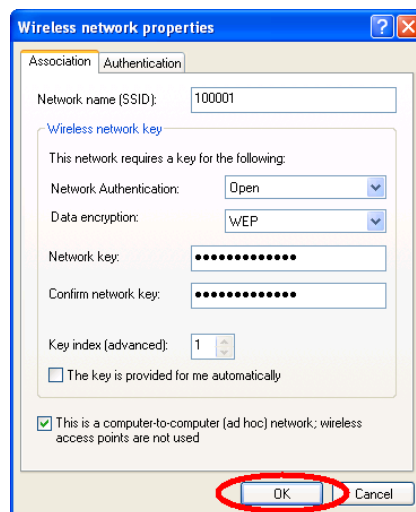
SMU-01007

23. Enter a check for "This is a computer-to-computer [ad hoc] network: wireless access points are not used".



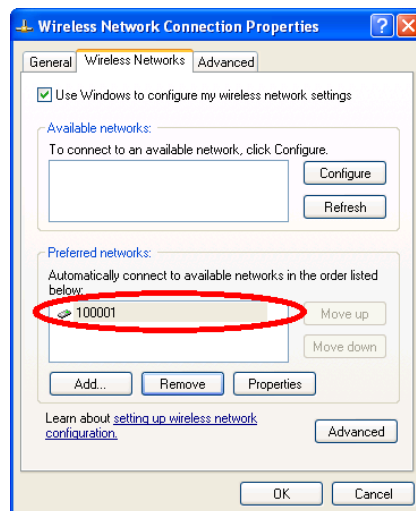
SMU-01008

24. When setting has been completed, click the button [OK] and close the window.



SMU-01009

25. Confirm creation of a profile with the same number as entered for "Network name (SSID)" in the preceding step in the column "Preferred networks" and click the button "OK" to close the window.




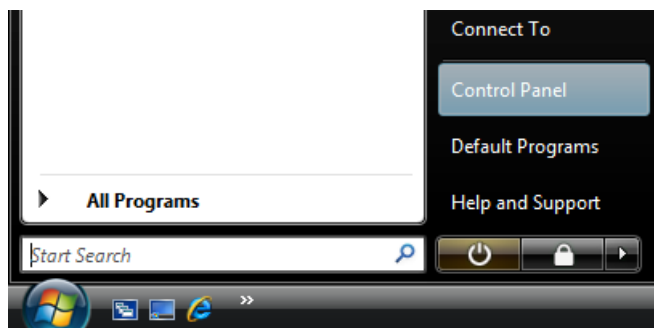
SMU-01010

26. This completes the wireless LAN setting on the PC side.



## For Windows Vista

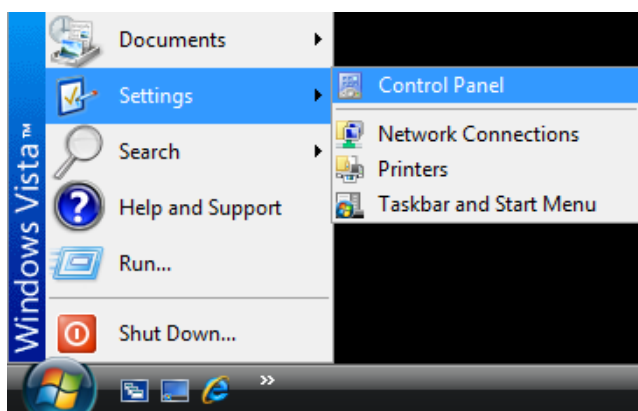
1. Click  button on the taskbar and select “Control Panel”.



SMU-01167

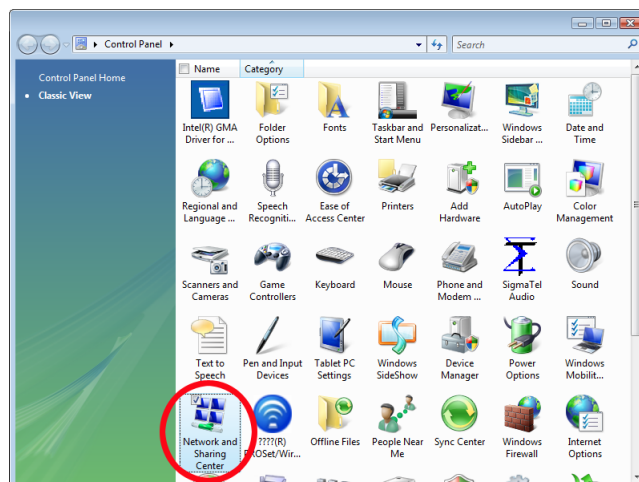
### NOTE:

Depending on the PC display settings, click  button and select “Control Panel” from “Settings”.



SMU-01168

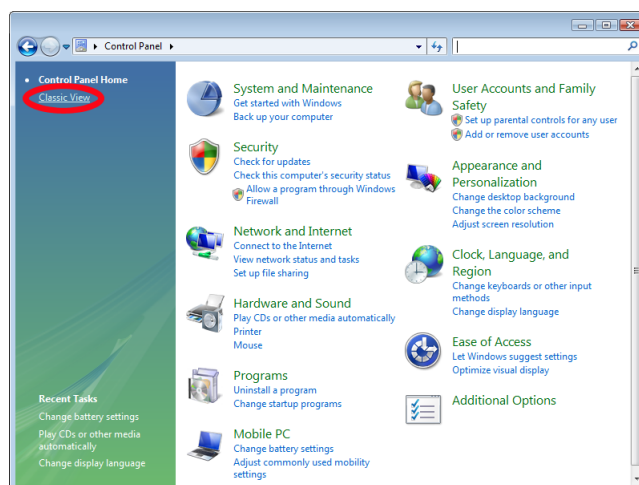
2. The control panel is displayed. Double-click “Network and Sharing Center”.



SMU-01169

### NOTE:

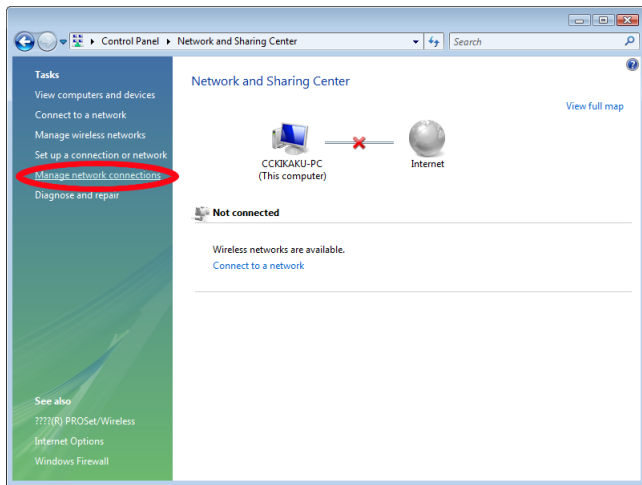
Depending on the display settings of the PC, there may be no “Network and Sharing Center”. In this case, click “Classic View” to switch the screen display.



SMU-01170

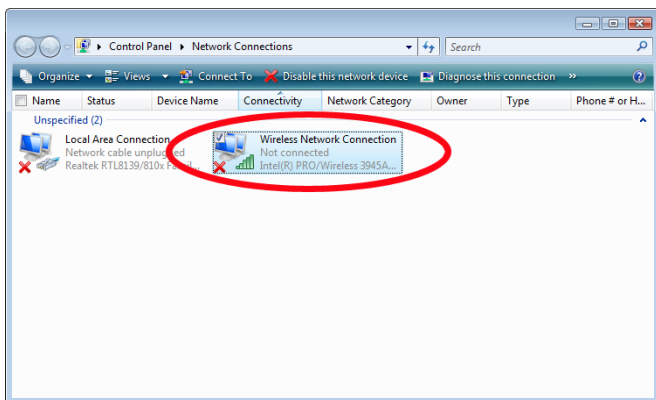


3. The screen “Network and Sharing Center” is displayed. Select “Manage network connections”.



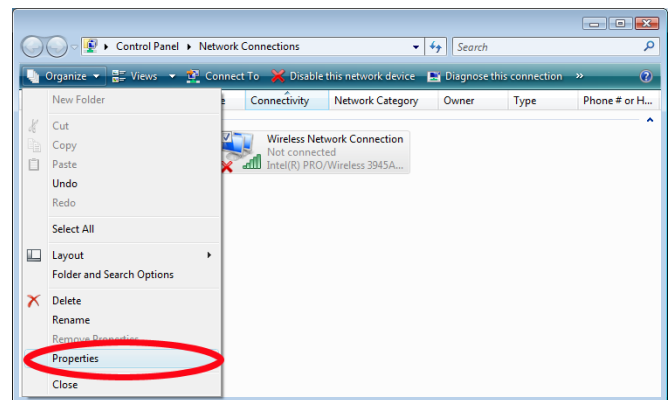
SMU-01171

4. The screen “Network Connections” is displayed. Select “Wireless Network Connection”.



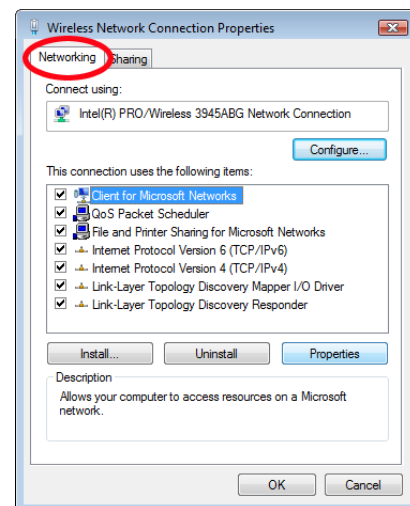
SMU-01172

5. Select “Properties” from “Organize” in the menu.



SMU-01173

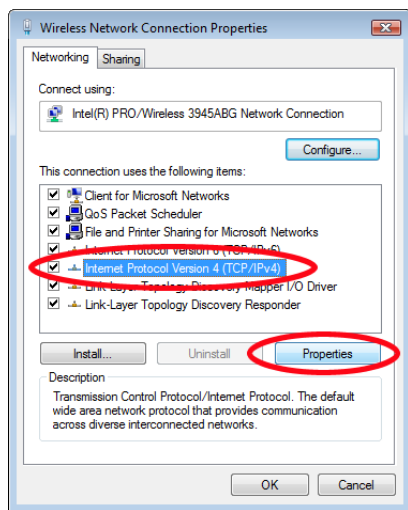
6. The screen “Wireless Network Connection Properties” is displayed. Select “Networking”.



SMU-01174

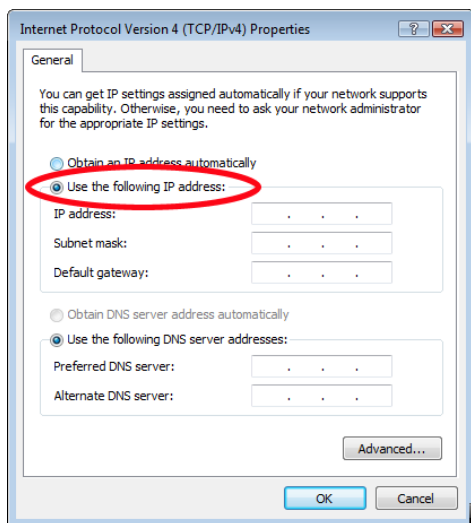


7. Select “Internet Protocol Version 4 (TCP/IPv4)” and click the “Properties” button.



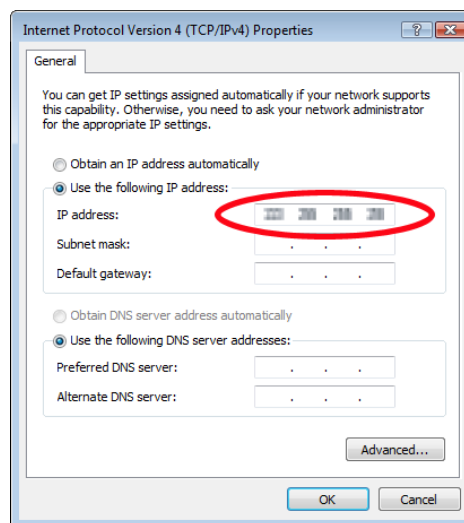
SMU-01175

8. Check “Use the following IP address:”.



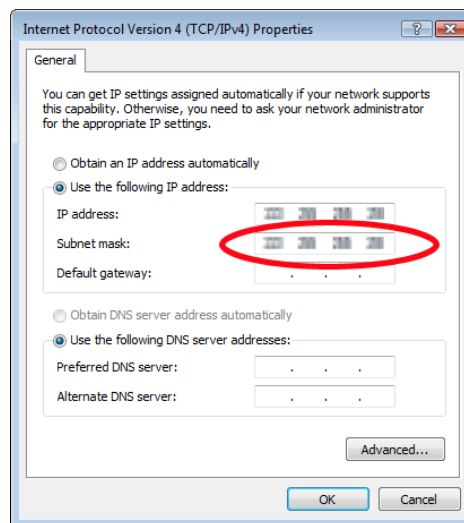
SMU-01176

9. Enter the address to “IP address”. Refer to “SS-MIII wireless LAN communication” enclosed with the SDI wireless LAN card for the characters to be entered.



SMU-01177

10. Enter numbers for “Subnet mask”. Refer to “SS-MIII wireless LAN communication” enclosed with the SDI wireless LAN card for the characters to be entered.



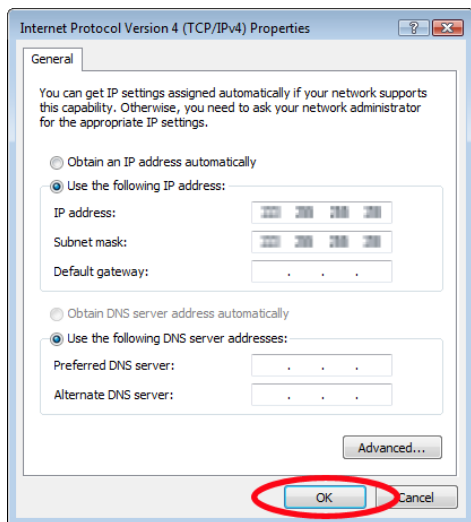
SMU-01178

11. Do not enter anything for “Default gateway” and leave the field blank.

12. Do not enter anything for “Preferred DNS server” and “Alternate DNS server” and leave the fields blank.

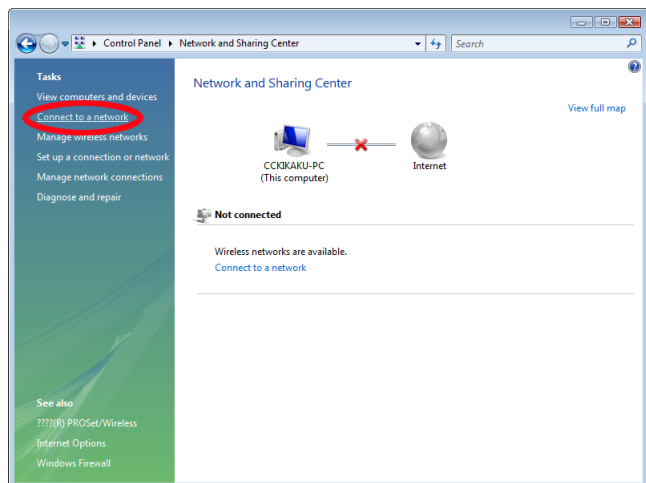


13. After confirmation of the entered setting contents, click the button [OK] and close the window.



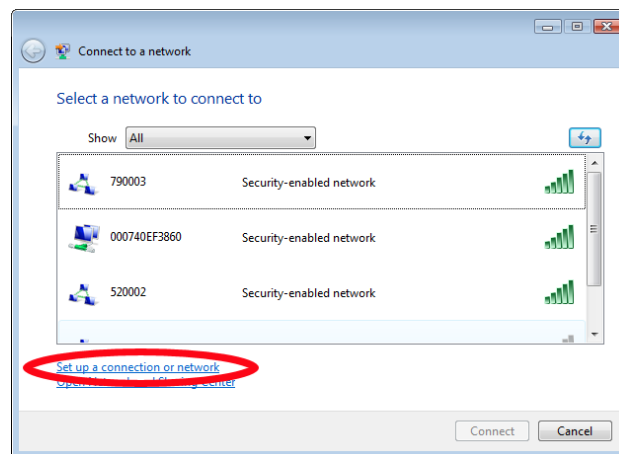
SMU-01179

14. On the "Network and Sharing Center" screen, select "Connect to a network".



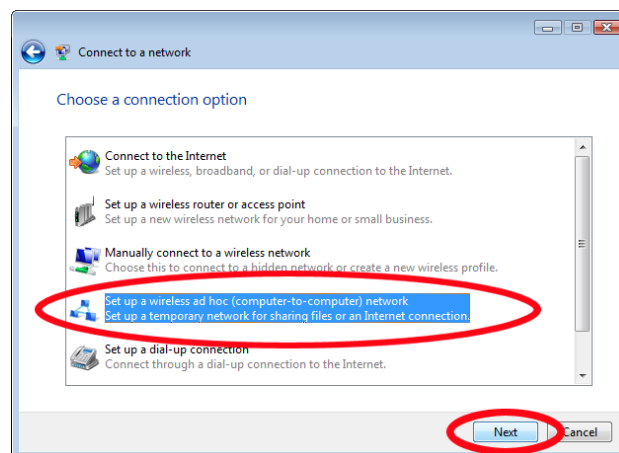
SMU-01180

15. This displays a "Connect to a network" screen. Click the "Set up a connection or network" button.



SMU-01181

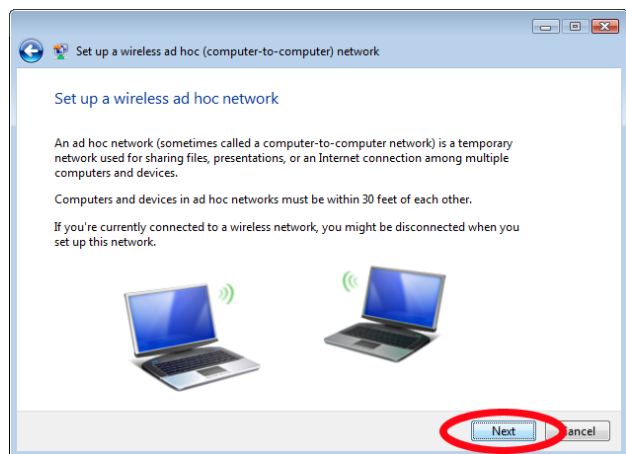
16. Select "Set up a wireless ad hoc (computer-to-computer) network" and click the [Next] button.



SMU-01182

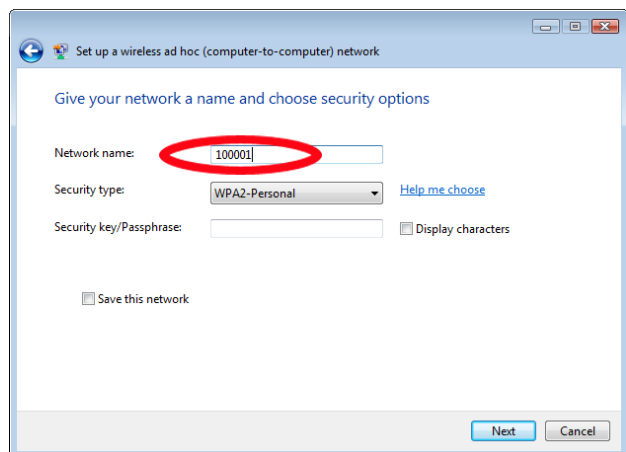


17. Below screen will be displayed. Click the [Next] button.



SMU-01183

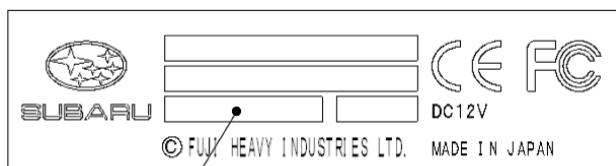
18. Enter the production number of the communication SDI in "Network Name". (Here, "100001" is entered as an example.)



SMU-01184

#### NOTE:

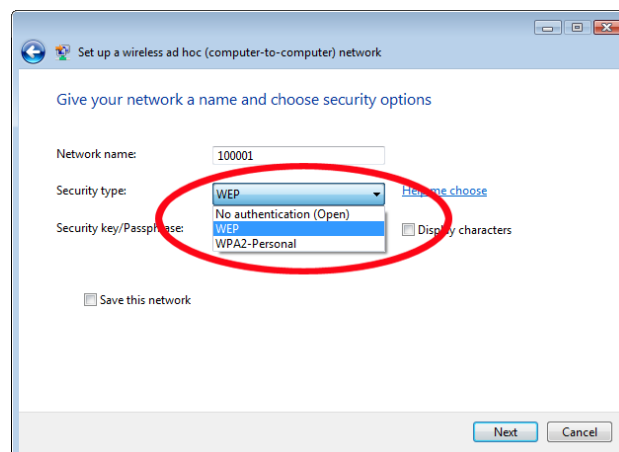
The SDI Production Number is shown on the seal on the side of the SDI.



**Production Number**

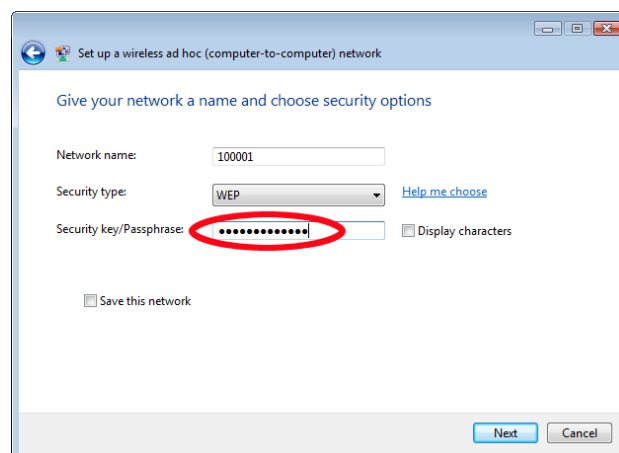
SMU-01000

19. Select "WEP" for "Security type".



SMU-01185

20. Enter an encryption key (alphanumeric) for "Security key/Passphrase". Refer to "WEP Key" for "SSMIII wireless LAN communication" enclosed with the SDI wireless LAN card for the characters to be entered.

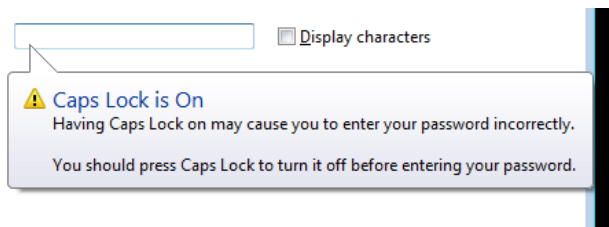


SMU-01186



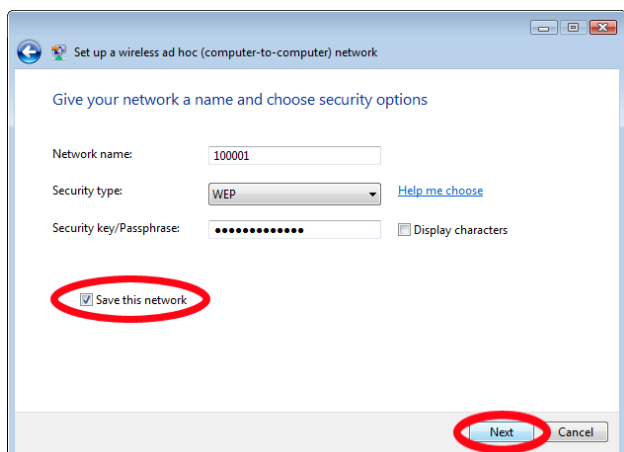
**NOTE:**

Enter the network keys using lower case letters. In case of input in “Caps Lock” status (upper case letters), an warning message is displayed.



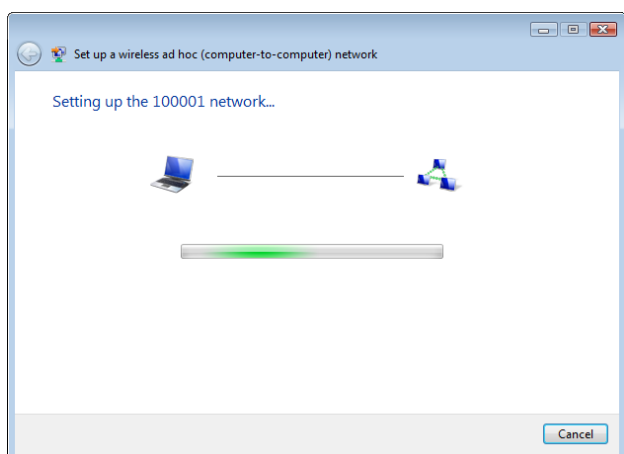
SMU-01187

21. Enter a check for “Save this network”. Click the [Next] button.



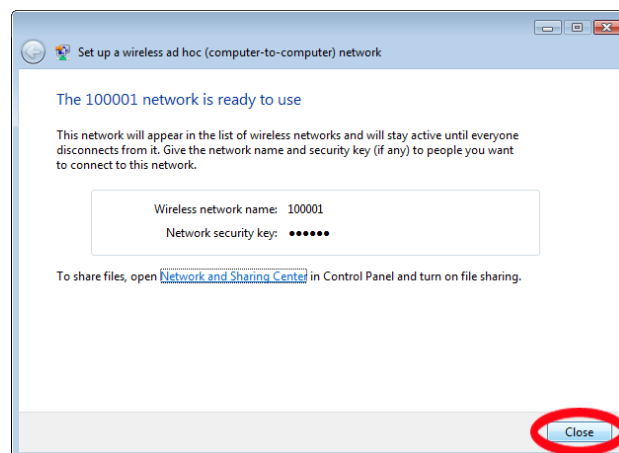
SMU-01188

22. Stand by as the message below will appear on the screen.



SMU-01189

23. Below screen will be displayed when installation preparation is normally finished. Click [Close] button to end wireless LAN installation for PC side.



SMU-01190



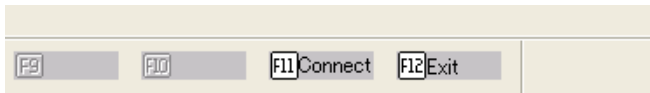
## Wireless LAN setting on the SDI side

1. Insert an SDI wireless LAN card into the CF card slot of the SDI.

### NOTE:

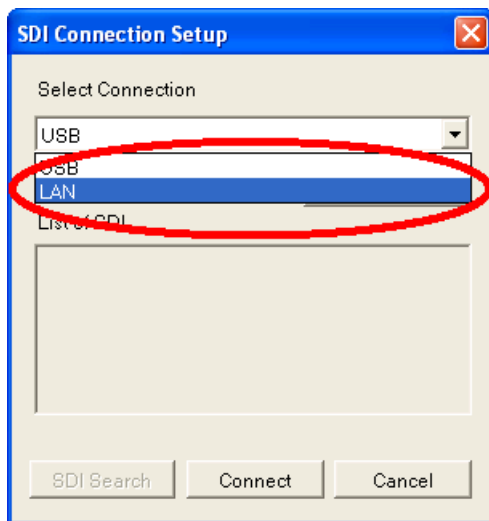
The wireless LAN card must be inserted to the CF card slot CF2, the lower one, of the SDI.

2. Connect SDI and PC with a USB cable.
3. Switch on the SDI power.
4. Start SSMIII (PC application).
5. Click the **F11 Connect** button on the Function Key Bar of the main menu screen or press function key F11 of the PC.



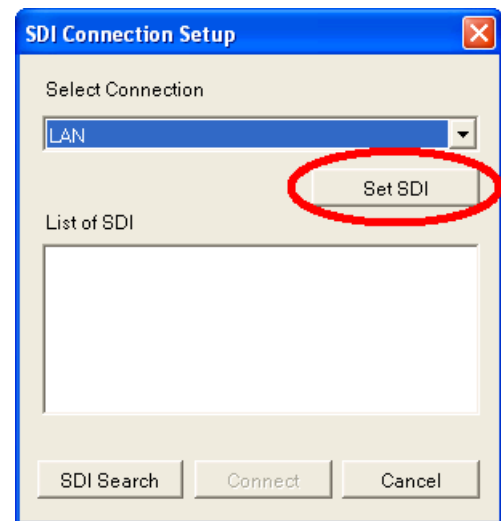
SMU-01011

6. The screen "SDI Connection Setup" is displayed. Select "LAN" for "Select Connection".



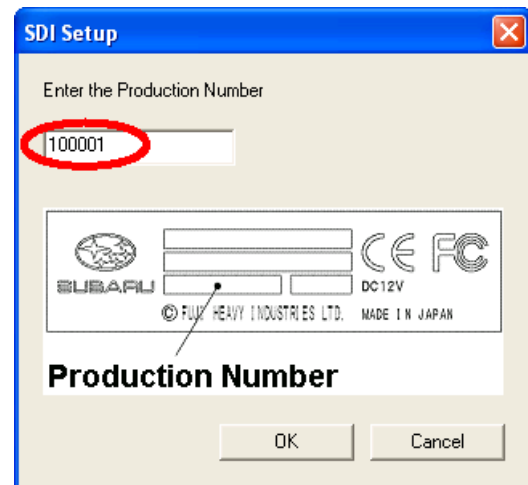
SMU-01012

7. Click the button "Set SDI".



SMU-01013

8. The SDI setting window is displayed. Enter the Production Number. (Here, "100001" is entered as an example.)



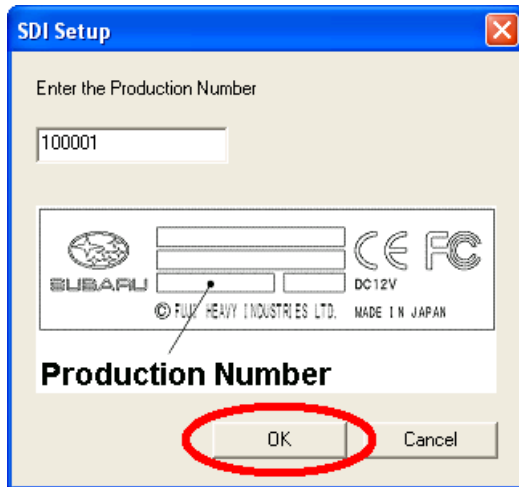
SMU-01014

### NOTE:

The number entered here is the same as the number entered for "Network Name (SSID)" with "Wireless LAN Setting on the PC Side". If a different number has been entered, change it to the same number. In case of a different number, communication between SDI and PC cannot be established.

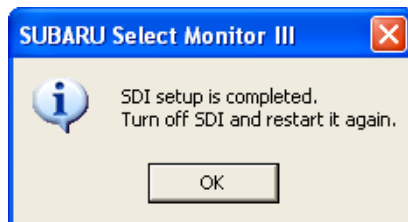


9. Confirm the entered number and click the button [OK].



SMU-01015

10. The setting completion message is displayed. Click the button [OK].



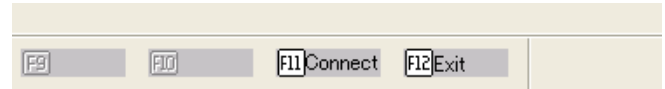
SMU-01016

11. Restart the SDI.

## Switching to wireless LAN connection

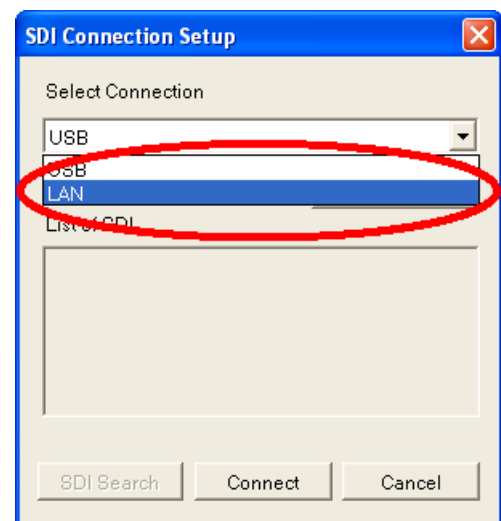
1. Wait until communication between PC and SDI has been established.
2. When communication has been established, start the SSMIII (PC application).

3. Click the **F11 Connect** button on the Function Key Bar of the main menu screen or press function key F11 of the PC.



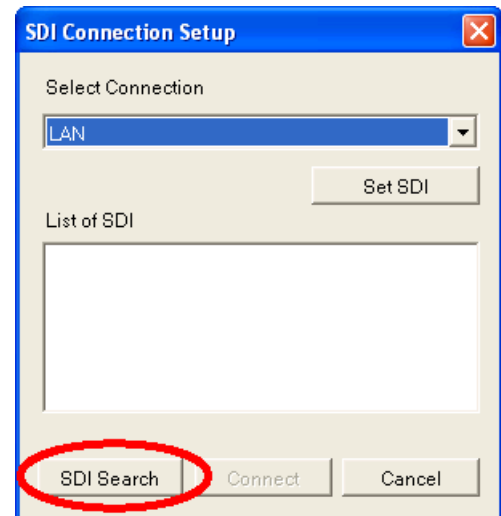
SMU-01011

4. The screen "SDI Connection Setup" is displayed. Select "LAN" for "Select Connection".



SMU-01012

5. Click the button "SDI Search".



SMU-01017



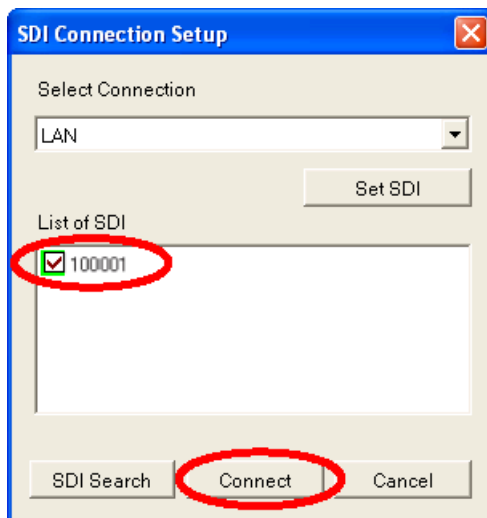
**NOTE:**

In some cases, depending on Windows Security setup, the screen shown below appears. If so, click "Unblock".



SMU-01038

6. The SDIs which can be connected are shown in "List of SDI". Enter a check for the SDI to be connected to and click the button "Connect".

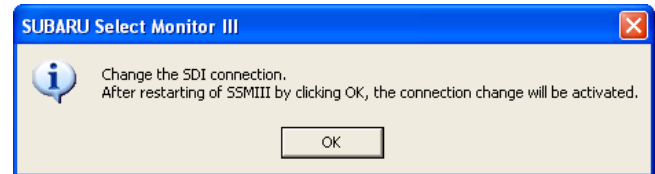


SMU-01018

**NOTE:**

The connectable SDIs may not be displayed when the Windows firewall is running. In this case, disable the firewall and perform the [SDI Search] again.

7. The SDI connection setting change message is displayed. Click the button [OK].

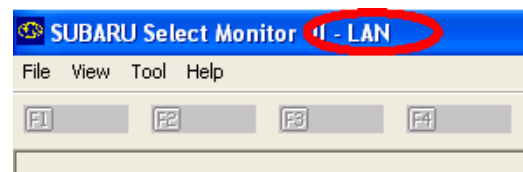


SMU-01019

8. The PC application is shut down automatically. Restart the PC application.

**NOTE:**

- From this time on, the connection method for PC and SDI is wireless LAN.
- The present connection method for PC and SDI is shown on the title bar at the left top of the screen.



SMU-01020

## Switching to USB connection

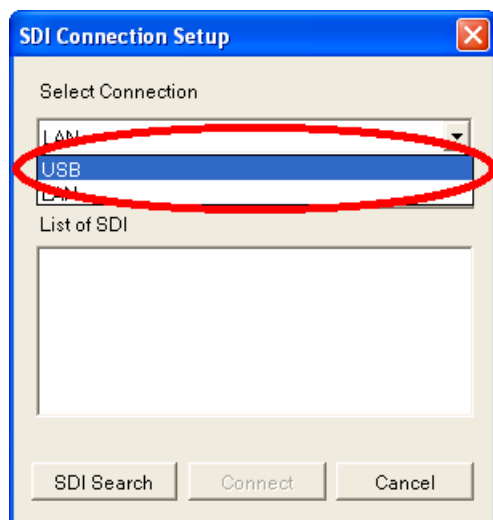
1. Start SSMIII (PC application).
2. Click the **F11 Connect** button on the Function Key Bar of the main menu screen or press function key F11 of the PC.



SMU-01011

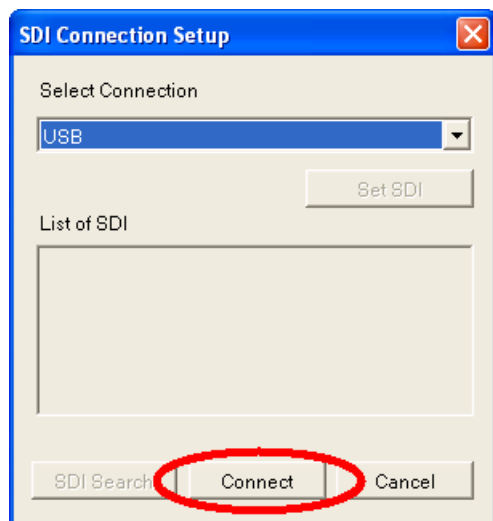


3. The screen “SDI Connection Setup” is displayed. Select “USB” for “Select Connection”.



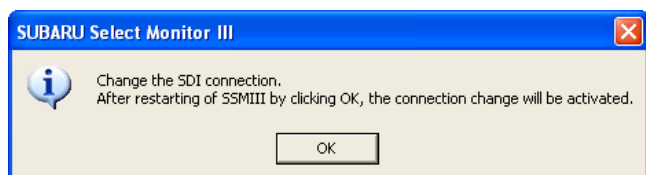
SMU-01021

4. Click the button “Connect”.



SMU-01022

5. The SDI connection setting change message is displayed. Click the button [OK].



SMU-01019

6. The PC application is shut down automatically. Restart the PC application.

**NOTE:**

From this time on, the SDI connection method becomes “USB”.

### When using equipment already set for wireless LAN

1. Insert a wireless LAN card into the SDI and switch on the SDI power.
2. Wait until communication between PC and SDI has been established.
3. When communication has been established, start the SSMIII (PC application).
4. Afterwards, select and execute the desired function.

**NOTE:**

Once wireless LAN setting has been completed, connection setting or change by clicking the function key bar is not required.



## List of terms related to Wireless LAN communication

Term	Meaning
ASCII	Abbreviation of American Standard Code for Information Interchange. A general system of specific characters allotted to recognition of characters and symbols by a computer.
DNS server	“DNS” is the abbreviation of “Domain Name System”. A system for converting a domain name corresponding to the name of a computer on the Internet to an IP address.
IEEE	Abbreviation of Institute of Electrical and Electronic Engineers. The Institute of Electrical and Electronic Engineers has established standards for electronic parts, communication methods, etc.
IP address	“IP” is the abbreviation of Internet Protocol. An identification number allotted to a network, a connected computer, or communication equipment. This corresponds to the address of a computer on the network.
LAN	The abbreviation of Local Area Network. A network for connection of computers, printers, etc. for data exchange.
OS	The abbreviation of Operating System. This is the overall management software acting as go-between between PC hardware and various applications for keyboard input, screen output, and other I/O functions etc.
PC card	A standardized expansion card for notebook computers.
SSID	The abbreviation of Service Set Identifier. This is something like a group name in the network, and communication is possible only when the same SSID has been registered between terminals.
TCP/IP	This is the abbreviation of Transmission Control Protocol/Internet Protocol. This is a protocol used as standard on the Internet etc.
WEP	This is the abbreviation of Wired Equivalent Privacy. This is data encryption technology for wireless LAN communication. For wireless LAN communication between computers, a common encryption key (like a password) is set, and the data cannot be deciphered when the encryption keys are not the same.
Autorun	A function for automatic program start when a CD is set to the CD-ROM drive.
Gateway	This is a computer or software for connection of a computer network to another network using different media or protocols.
Subnet mask	A value defined for identification of a gigantic network like the Internet and a small network connecting computers etc. underneath it.
Driver	Software acting as go-between for OS control of peripheral equipment with different specifications and control methods for each product.
Network key	An encryption key used with a wireless LAN. *Transcribe “Security key” or “Passphrase” for Windows Vista as below.
Protocol	A protocol for communication between computers via a network.
Wireless LAN card	A communication expansion card installed in a personal computer for LAN communication with wireless transmission and reception of data.
Wireless access point	A device relaying electric waves for connection of terminals for wireless LAN communication.



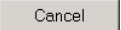
## Communication Messages

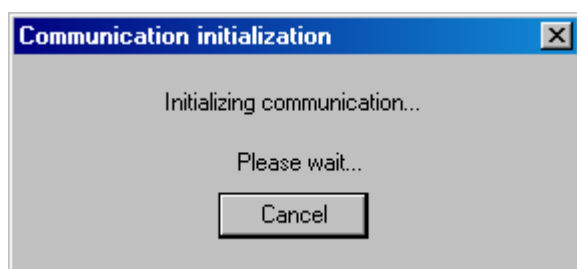
With the SSMIII, the PC application communicates via the interface box with the control modules for which SSMIII diagnosis is supported.

While the PC application is performing a communication operation, various messages appear on the display to indicate communication status. The following explains the meanings of the messages that appear.

### Communication Initialization

This message appears when the PC application starts communication with a control module for which SSMIII diagnosis is supported.

To interrupt communication, click the  button.

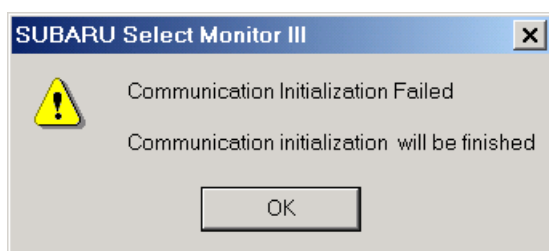


SMU-00542

### Communication Error

The error code and error message appear when communication between the PC application and control module is no longer possible for some reason.

For details about error codes and the actions required to correct the problem, see the Communication Error Code List.



SMU-00119

#### NOTE:

If an error occurs but an error message does not appear, restart the PC application and the SDI. When restarting the SDI, either disconnect the diagnosis cable from the vehicle's data link connector, or hold down both the [MENU] key and the [DOWN] key of the SDI for at least two seconds to turn the SDI off, and then confirm that the PWR LED of the SDI does not light. Then turn on the SDI power again.



## All Systems Diagnosis

Selecting this item displays the fault detect status of all control system control modules for which SSMIII diagnosis is supported, and memorized diagnostic codes.

When a particular control system cannot be identified as the causes of a vehicle's problem, perform this diagnosis and use the displayed diagnostic codes to perform diagnosis.

### IMPORTANT:

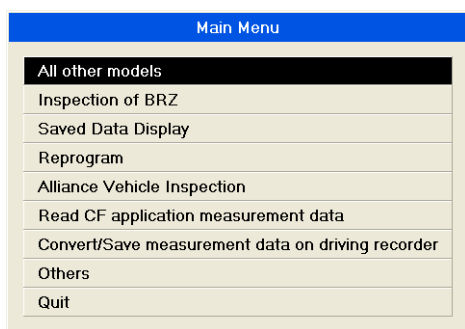
- For a vehicle equipped with a cruise control system, turn on the cruise control switch before performing inspection.
- For a vehicle equipped with a Automatic Light and Wiper system, set the lighting switch to a position other than (AUTO) before executing the inspection.

### NOTE:

- This inspection mode may not function in the case of certain vehicle models and vehicle specifications.
- The item displayed by [All System Diagnosis] varies according to a system. In [Diagnostic Code(s) Display], In the system that identifies Present fault and Past faults, only Present fault displays. However, in the system without those identification Present Status may not displays (all the time).

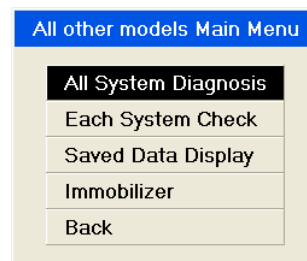
## Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



SMU-01294

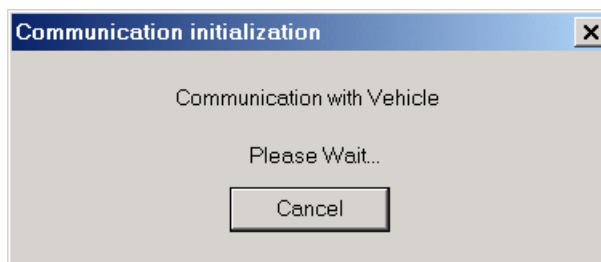
3. Select [All System Diagnosis] at the item selection screen.



SMU-01295

The SSMIII displays the screen shown below when the control system and communication system are started up.

To cancel the diagnosis, click the  button.



SMU-00123

## Diagnosis Result Display

A screen appears showing the fault detection status of all of the control system control modules, and diagnostic codes that indicate details about the faults.

Code	Description & trouble position	Trouble occurrence record	IG counter
Engine Control System			
No Diagnostic Code Present			
Cruise Control			
No Diagnostic Code Present			
Transmission Control System			
No Diagnostic Code Present			
Brake Control System			
No Diagnostic Code Present			
Number of Diagnostic Code(s): 0			

SMU-00124

### NOTE:

- The message "No Diagnostic Code Present" indicates that no fault could be detected.
- The message "Communication Impossible" appears when the vehicle being inspected is not equipped with the required control systems, or when something prevents communications from being performed.



## Each System Check

This type of inspection allows selection of a particular system from among the control system for which SSMIII diagnosis is supported. Then control module input/output data, memorized diagnostic codes, and other data can be viewed on the PC display.

This screen can also be used to delete diagnostic codes memorized by a control module, to perform inspections by forcing operation of actuators, to configure control module function settings, etc.

### IMPORTANT:

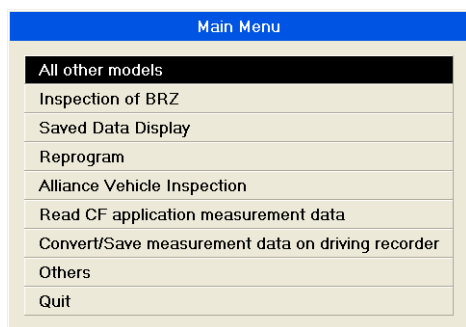
- For diagnosis of the cruise control system or auto air conditioning system, turn on the system main switches before performing inspection.
- For the diagnosis of the Automatic Light and Wiper system, set the lighting switch to a position other than (AUTO) before executing the inspection.

### NOTE:

Some functions may not be available in the case of certain vehicle models and vehicle specifications.

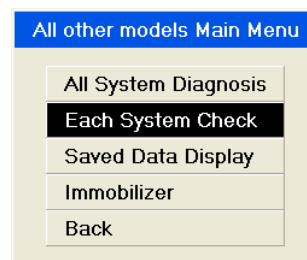
## Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



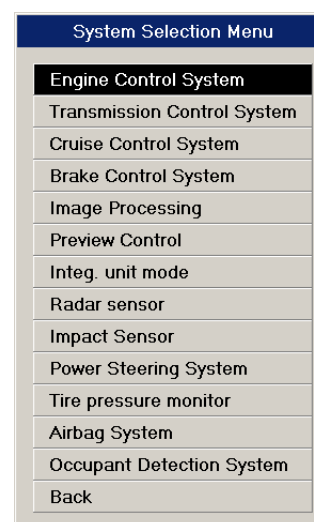
SMU-01294

3. Select [Each System Check] at the item selection screen.



SMU-01296

4. On the System Selection Menu, select the desired system and then press the Enter key or left-click with the mouse. (As an example, "Engine Control System" is selected.)

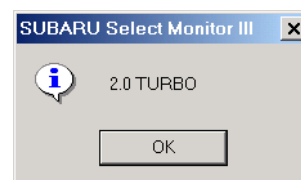


SMU-00665

5. When the PC application starts communication with the control module of the selected system, a compliance verification message for the system being diagnosed appears. Click the [OK] button.

### NOTE:

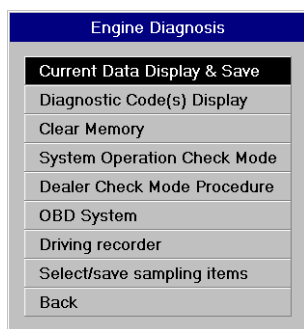
The compliance verification message that appears depends on vehicle model and specifications.



SMU-00128



This displays the fault diagnosis menu screen.



SMU-00601

**NOTE:**

- The contents of the fault diagnosis menu screen depend on vehicle model and specifications, and on the control system.
- Some inspection and adjustment items may not be available in the case of certain vehicle models and vehicle specifications.



## Current Data Display and Save

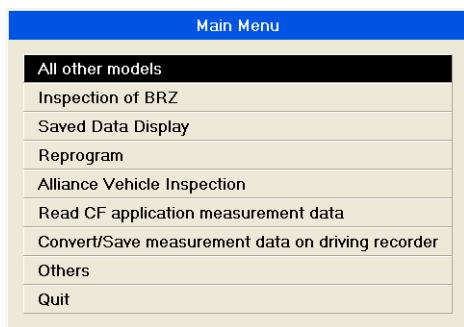
This system allows sampling of control module input/output data of control systems for which SSMIII diagnosis is supported, and sampling of control data.

This data can be displayed as digital data, and can also be switched to a graph data format.

Sampled data can also be assigned a name and stored as a file in a particular folder in PC memory.

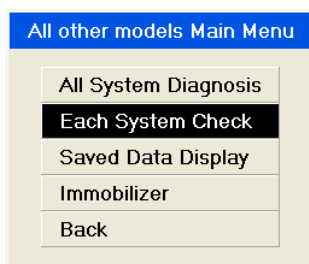
### Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



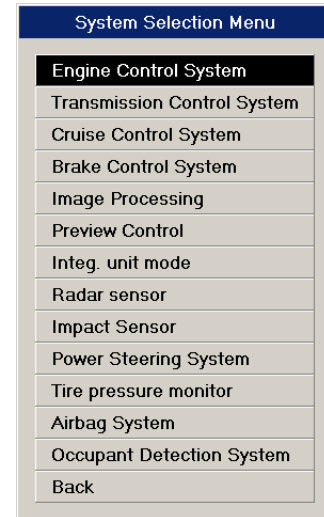
SMU-01294

3. Select [Each System Check] at the item selection screen.



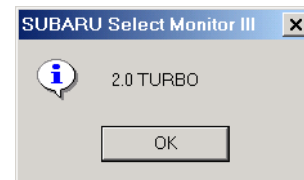
SMU-01296

4. On the System Selection Menu, select the desired system and then press the Enter key or left-click with the mouse. (As an example, "Engine Control System" is selected.)



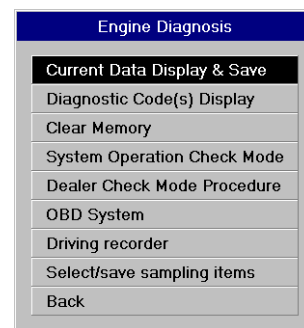
SMU-00665

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00128

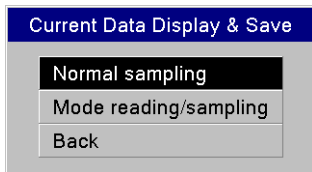
6. From the list of fault diagnosis items, select [Current Data Display & Save] and then press the Enter key or left-click with the mouse.



SMU-00601



7. This displays the dialog box shown below. Select [Normal sampling] and then press the Enter key or left-click with the mouse.



SMU-00508

8. This displays the Digital Data Screen and automatically starts sampling.

Item	Value	Unit	Maximum	Minimum	Average
Coolant Temp.	87	°C	87	87	87
A/F Correction #1	-0.8	%	-0.8	-1.6	-1.6
A/F Learning #1	0.0	%	0.0	0.0	0.0
Mani. Absolute Pressure	39	kPa	39	37	38

SMU-00569

The Digital Data Screen shows in real-time current values, maximum values, minimum values, and average values of control module's input/output data and control data.

## Digital Data Screen Operations

### Changing the Width of Screen Cells

The widths of cells on the screen can be adjusted as desired. Move the mouse pointer to the arrow on the screen below so the cell width adjustment pointer appears. Then move the pointer left or right to adjust the cell width for easy reading.

Item	Value	Unit	Maximum	Minimum	Average
Coolant Temp.	87	°C	87	87	87
A/F Correction #1	-0.8	%	0.0	-1.6	-1.6
A/F Learning #1	0.0	%	0.0	0.0	0.0
Mani. Absolute Pressure	37	kPa	39	37	37

SMU-00570

### Scrolling the Screen

You can scroll the screen either by dragging the scroll bar on the right side of the screen, or by clicking the scroll button at the upper/lower end of the scroll bar.

Maximum	Minimum	Average
5.41	3.01	4.27
0.780	0.070	0.355
2.14	2.00	2.10
33	32	32
13.7	12.9	13.5
0.54	0.54	0.54
0.0	0.0	0.0
3.33	2.05	2.56
1.44	1.20	1.32
55	37	46
0.0	0.0	0.0
100	100	100
-45	-63	-54
1.08	1.05	1.05
0.0	0.0	0.0


SMU-00137

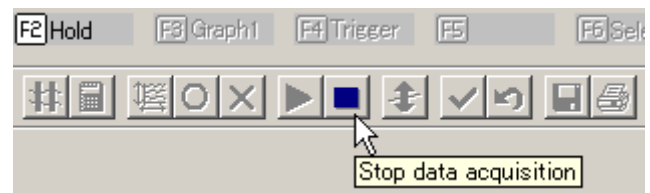
### NOTE:

Pressing the up or down arrow key on the PC keyboard will scroll the screen by one cell.

Pressing the Page Up or Page Down key on the PC keyboard will scroll one screen.


### Stopping a Sampling Operation

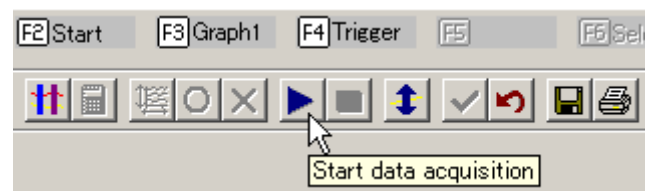
Click the  icon on the Data List Toolbar or the **[F2]Hold** button on the Function Key Bar to stop sampling. You can also stop sampling by pressing the F2 function key on the PC keyboard.



SMU-00571

### Starting a Sampling Operation


Click the  icon on the Data List Toolbar or the **[F2]Start** button on the Function Key Bar to start sampling. You can also start sampling by pressing the F2 function key on the PC keyboard.



SMU-00572



## Switching to the Graph 1 Screen

If a sampling operation is being performed, stop it. Click the  icon on the Data List Toolbar or the [F3]Graph1 button on the Function Key Bar to display the Graph 1 Screen.


Each press of the [F3] button on the Function Key Bar cycles in the following sequence: → [F3 Graph1] → [F3 Graph2] → [F3 Snapshot] →.

You can also display the Graph 1 Screen by pressing the F3 function key on the PC keyboard.



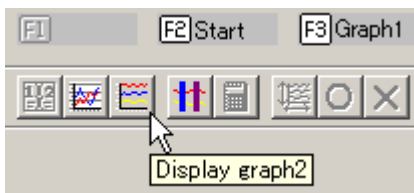
SMU-00573

## Selecting Graph 2 Screen (Single-screen 8-channel Graph)

If a sampling operation is being performed, stop it. Click the [F3]Graph1 icon on the Data List Toolbar twice or click the  button on the Function Key Bar to display Graph 2 Screen.

Each press of the [F3] button on the Function Key Bar cycles in the following sequence: → [F3 Graph1] → [F3 Graph2] → [F3 Snapshot] →.

You can also display the Graph 2 Screen by pressing the F3 function key on the PC keyboard twice.



SMU-00574

## Changing the Item Sequence

The sequence that the items appear on the display can be changed as desired.


Select the item you want to move. Next, while holding down both the Ctrl key and Shift key on the PC keyboard, press the up or down arrow key to move the selected item upwards or downwards.

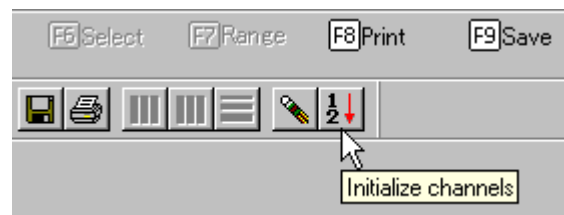
Item	Value	Unit
<input checked="" type="checkbox"/> Engine Speed	791	rpm
<input checked="" type="checkbox"/> Coolant Temp.	91	°C
<input checked="" type="checkbox"/> A/F Correction #1		
<input checked="" type="checkbox"/> A/F Learning #1	4.7	%

SMU-00150

## Initializing the Item Sequence

The items' sequence shown on the display can be initialized.

Clicking the  icon on the Data List Toolbar makes the items go back to their initial positions.



SMU-00728


## Data Select Screen

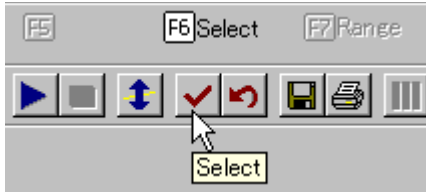
The Data Select Screen can be used to select particular data from all of the data sampled and view it. When there is no sampling operation being performed, click the check box in front of the item you want to view. An item is selected for viewing when there is a check mark inside its check box. You can also select (check) the checkbox of the highlighted item by pressing the space bar on the PC keyboard.

Item	Value	Unit
<input checked="" type="checkbox"/> Engine Speed	779	rpm
<input type="checkbox"/> Coolant Temp.	91	°C
<input checked="" type="checkbox"/> A/F Correction #1	0.8	%
<input checked="" type="checkbox"/> A/F Learning #1	3.9	%
<input type="checkbox"/> Vehicle Speed	0	km/h

SMU-00151



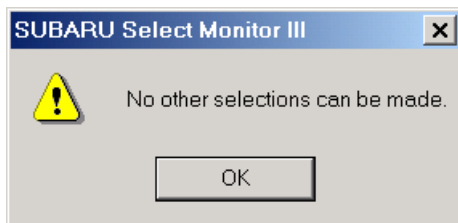
Click the  icon on the Data List Toolbar or the **F6|Select** button on the Function Key Bar. This will display the selected items only. You can also display the selected items by pressing the F6 function key on the PC keyboard.



SMU-00575


#### NOTE:

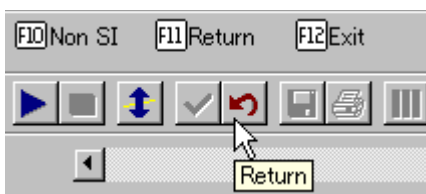
- Displaying selected data causes data sampled up to that point to be deleted.
- Sampling is faster when specific data items are selected. (This applies only to engine and transmission sampling.)
- If the message dialog box shown below appears while you are selecting data items, it means that the limit on the number of selectable data items has been reached. Selection of further data items is not possible after this message appears. To select other items, deselect the check boxes next to the currently selected (checked) items, and then select the new items.



SMU-00154


### Returning to the All Data Screen

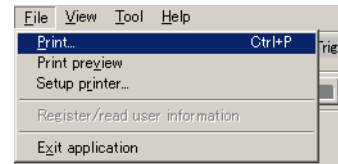
Click the  icon on the Data List Toolbar or the **F11|Return** button on the Function Key Bar to display the All Data Screen. You can also return to the All Data Screen by pressing the F11 function key on the PC keyboard.



SMU-00576

### Printing Sampled Data

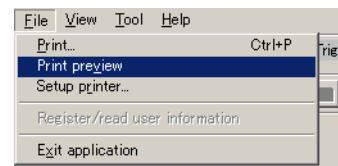
If a sampling operation is being performed, stop it. Click the [File] menu and then select [Print]. You can also print by clicking the  icon on the Data List Toolbar, by clicking the **F8|Print** button on the Function Key Bar, or by pressing the F8 function key on the PC keyboard.



SMU-00666

### Previewing the Print Image

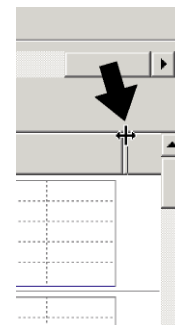
Print Preview lets you view the print image to confirm there are no problems before actually printing. Click the [File] menu and then select [Print Preview].



SMU-00667

#### NOTE:

If part of the print image runs outside of the print area, use the arrow buttons at the bottom of the screen to adjust the cell width. Moving the mouse pointer to an arrow will cause it to change to an adjustment pointer. Drag the adjustment pointer left or right to adjust cell width.

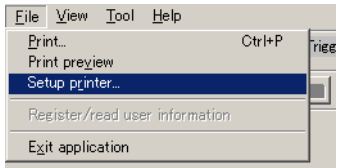


SMU-00162



## Setting Up the Printer

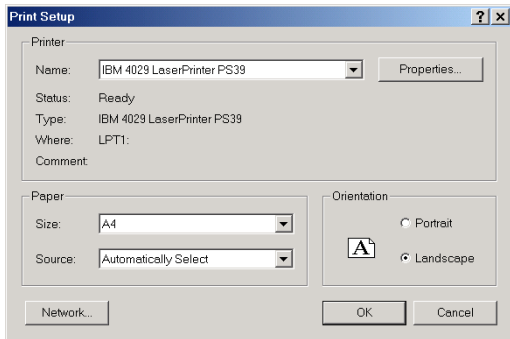
If a sampling operation is being performed, stop it. Click the [File] menu and then select [Setup printer].



SMU-00668

After the Print Setup dialog box shown below appears, use [Printer Name] to select the printer to be used for printing.

Under [Orientation], select [Landscape] and then click the [OK] button.



SMU-00164


### NOTE:

Though it is possible to print with the [Portrait] setting under [Orientation], doing so can cause part of the data to run outside of the printing area. Because of this, use of the [Landscape] setting is recommended.

## Saving Sampled Data

There are two different ways to save sampled data: saving all sampled data and using cut-and-save to save only specific parts of the sampled data.

### Saving All Sampled Data

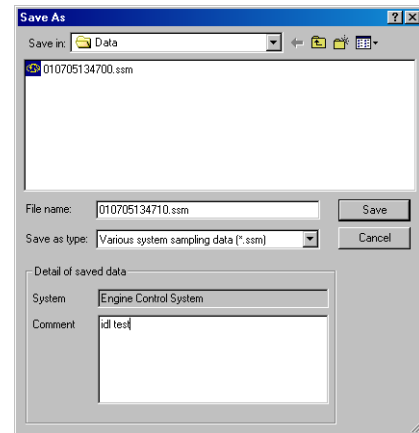
If a sampling operation is being performed, stop it. Click the  icon on the Data List Toolbar, or the **[F9]Save** button on the Function Key bar. You could also press the F9 function key on the PC keyboard.



SMU-00577

This causes the sampled data save dialog box to appear.

The name of the data file being saved is generated automatically in accordance with the current time and date. If you want to use the generated file name as-is, click the dialog box [Save] button. If you want to change to a different file name, type in the name you want.



SMU-00524

### NOTE:

- Sample data files are saved in the Data folder where the PC application is installed. To change to another storage location, specify the location you want in the Save in box of the save data dialog box.
- The Comment box of the Save As dialog box can be used to save general comments associated with the data or file.

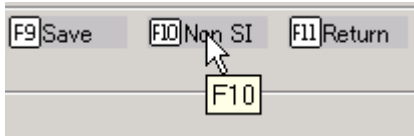
### Saving Specific Sampled Data Using Cut-and-Save

For details about how to use cut-and-save to save specific sampled data, see "Two Cursor Analysis".



## Using Non-SI Units to Display Sampled Data

If a sampling operation is being performed, stop it. Click the **F10 Non SI** button on the Digital Data Screen or Graph Screen Function Key Bar, or press the F10 function key on the PC keyboard to display the sampled data using the currently selected non-SI display units.

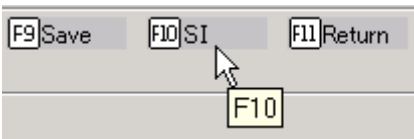


SMU-00169

### NOTE:


To use this function, the desired display units should be selected using the window that appears when the [Tool] menu [Option] command is executed.

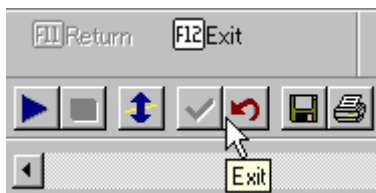
To return to SI unit display, click the **F10 SI** button on the Function Key Bar or press the F10 function key on the PC keyboard.



SMU-00171


## Returning to the Fault Diagnosis Menu Screen

When there is no sampling operation being performed, click the  icon on the Data List Toolbar or the **F12 Exit** button on the Function Key Bar. You can also return to the previous screen by pressing the F12 function key on the PC keyboard.



SMU-00578

## Graph 1 Screen

When there is no sampling operation being performed, click the  icon on the Data List Toolbar or the **F3 Graph1** button on the Function Key Bar to display the Graph 1 Screen.

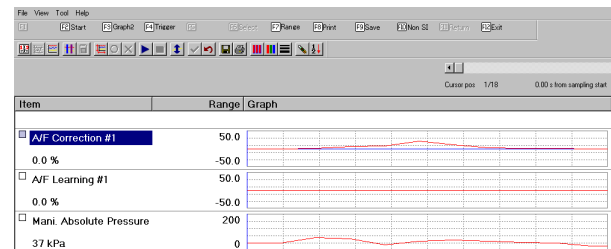
Each press of the [F3] button on the Function Key Bar cycles in the following sequence: → [F3 Graph1] → [F3 Graph2] → [F3 Snapshot] →.

You can also display the Graph 1 Screen by pressing the F3 function key on the PC keyboard.




SMU-00579

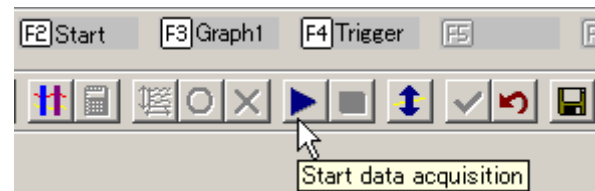
## Graph 1 Screen



SMU-00580

## Starting a Sampling Operation


Click the  icon on the Data List Toolbar or the **F2 Start** button on the Function Key Bar to start sampling. You can also start sampling by pressing the F2 function key on the PC keyboard.



SMU-00581



## Stopping a Sampling Operation

Click the  icon on the Data List Toolbar or the **F2|Hold** button on the Function Key Bar to stop sampling. You can also stop sampling by pressing the F2 function key on the PC keyboard.



SMU-00582

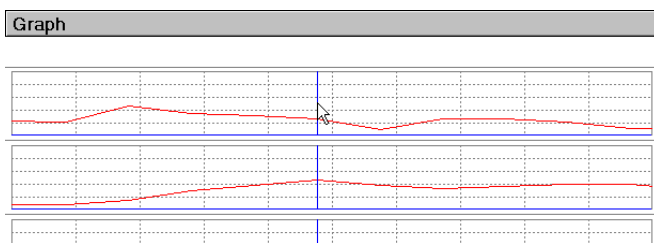
## Moving the Graph Cursor

On the Graph Screen, move the mouse pointer to your desired position and click with the mouse. The graph cursor moves to that position. Dragging the graph cursor also moves the graph cursor to the desired position.

The graph cursor can also be moved by operating the left and right arrow keys on the PC. At this time, you can also move the cursor position 10 data items at a time by each press of either the left or right arrow key with the [Ctrl] key held down.

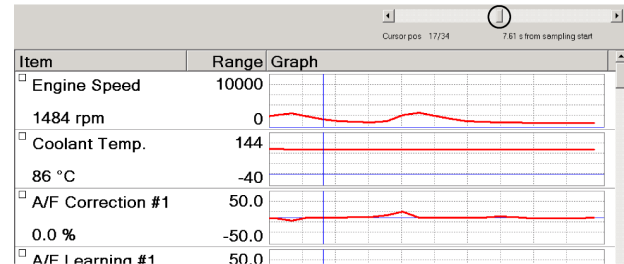
### NOTE:

When operating the mouse cursor of the Graph Screen to move the graph cursor, cursor operations are only on the currently displayed screen. To scroll the screen in the horizontal direction, operate the Sampling Status Bar.



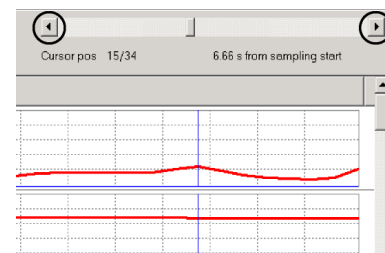
SMU-00693

Dragging the slider bar of the Sampling Status Bar left or right moves the graph cursor on the Graph Screen and scrolls the screen in the corresponding direction.



SMU-00185

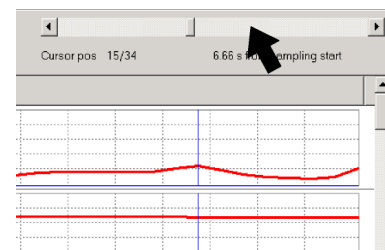
The graph cursor also can be moved by clicking the left or right arrow buttons at either end of the Sampling Status Bar.



SMU-00186

## Sampling Status Bar Slider


Clicking within the white spaces next to the slider bar automatically scrolls the graph screen horizontally until the slider reaches the point you clicked.



SMU-00221

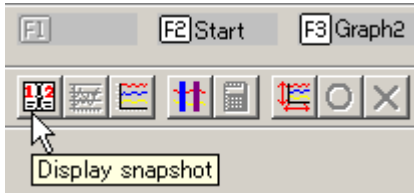


## Switching to the Digital Data Screen

When there is no sampling operation being performed, click the  icon on the Data List Toolbar or the **[F3] Graph2** button on the Function Key Bar twice to display the Digital Data Screen.

Each press of the **[F3]** button on the Function Key Bar cycles in the following sequence: → **[F3] Graph1** → **[F3] Graph2** → **[F3] Snapshot** →.

You can also display the Graph Screen by pressing the **F3** function key on the PC keyboard.




SMU-00583

## Data Select Screen

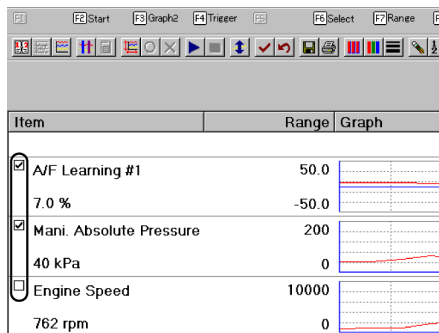
Particular graphs can be selected for display as desired. When there is no sampling operation being performed, click the check box in front of the graph item you want. An item is selected when there is a check mark inside its check box.

You can also select (check) the checkbox of the highlighted item by pressing the space bar on the PC keyboard.

Next, click the  icon on the Data List Toolbar or the **[F6] Select** button on the Function Key Bar.

This will display the selected graphs only.

You can also display the selected graphs by pressing the **F6** function key on the PC keyboard.

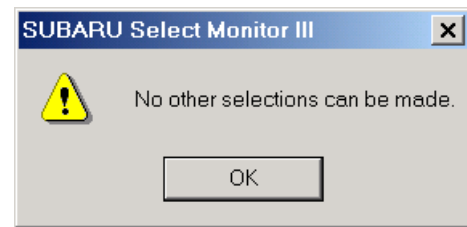


SMU-00584

### NOTE:

- Displaying selected data causes data sampled up to that point to be deleted.
- Sampling is faster when specific data items are selected. (This applies only to engine and transmission sampling.)


- If the message dialog box shown below appears while you are selecting data items, it means that the limit on the number of selectable data items has been reached. Selection of further data items is not possible after this message appears. To select other items, deselect the check boxes next to the currently selected (checked) items, and then select the new items.

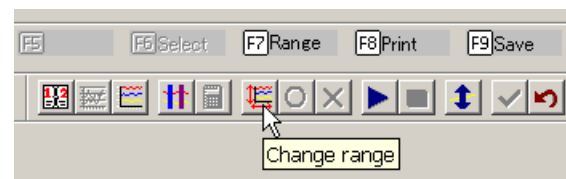


SMU-00154

## Changing the Range of the Graph Screen

The following procedure can be used to change the range settings of the graph screen vertical and horizontal axes in order to make graphs easier to read.

1. While sampling is stopped, click the  icon on the Data List Toolbar or the **[F7] Range** button on the Function Key Bar. You can also display the range setting screen by pressing the **F7** function key on the PC keyboard.








SMU-00585

2. After the screen below appears, input a value to specify the vertical axis range of the graph into the range box.

### NOTE:

The range box may not appear for some items.

Item	Range	Graph
<input checked="" type="checkbox"/> Engine Speed	10000	
757 rpm	0	
<input checked="" type="checkbox"/> Coolant Temp.	143	
90 °C	-40	
<input checked="" type="checkbox"/> A/F Correction #1	50.0	

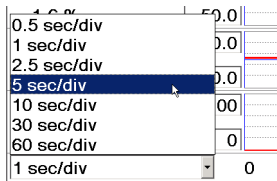
SMU-00195




3. To specify the graph horizontal (time) axis range, click the range selection box in the lower left corner of the screen, and then select the desired time setting.

**NOTE:**

The time settings that appear depend on sampling conditions.




SMU-00196

4. After the graph vertical axis and horizontal axis range settings are configured as desired, click the  icon on the Data List Toolbar or the **F11 OK** button on the Function Key Bar to apply them. You can also apply the range settings by pressing the F11 function key on the PC keyboard.



SMU-00586

To cancel the range change operation, click the  icon on the Data List Toolbar or the **F12 Cancel** button on the Function Key Bar. You can also cancel the range change operation by pressing the F12 function key on the PC keyboard.


**NOTE:**

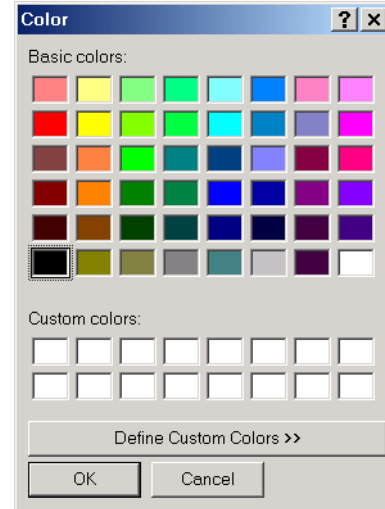
If sampling is started while 30 sec/div or 60 sec/div is selected with the time axis range box, sampling results will be displayed at 10-second intervals. This is done to prevent lag of the screen refresh operation by the PC application.

Stopping the sampling operation displays the 30 sec/div or 60 sec/div time axis screen.


## Changing the Graph Line Color

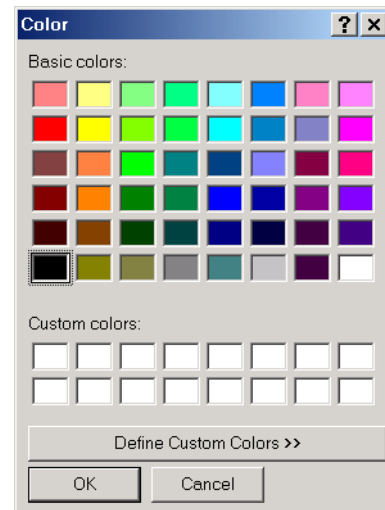
Graph line colors can be changed to make graphs easier to view. You can change the line color of a specific item or for all items.

To change the line color for a specific item, select the cell for the item, and then click the  icon on the Data List Toolbar. On the setting dialog box that appears, select the desired line color and then click the [OK] button.



SMU-00096

To change line color for all items, click the  icon. On the setting dialog box that appears, click the desired graph line color and then click the [OK] button.




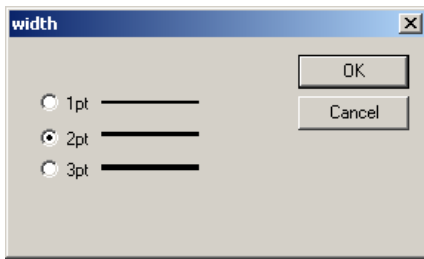
SMU-00096



## Changing the Graph Line Thickness

One of three different thicknesses can be selected for the graph line.

When there is no sampling operation being performed, click the  icon on the Data List Toolbar. On the setting dialog box that appears, click the desired graph line thickness and then click [OK].



SMU-00203

### NOTE:

If sampling is started while 2 pt or 3 pt is selected for the graph line thickness, sampling results will be displayed in a line thickness of 1 point (1 pt). This is done to prevent lag of the screen refresh operation by the PC application.

The graph line will change to selected thickness when sampling is stopped.

## Marking Function

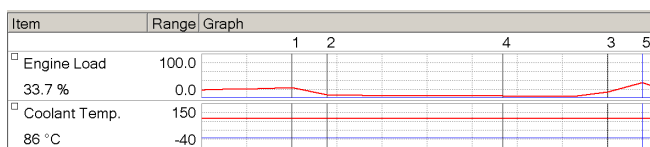
Marking a particular point on the graph is possible while sampling is processing or stopped.

Once marked data is stored, the markings will appear even when the stored data is shown again.

To do marking during sampling, press one of the number keys, alphabet keys or symbol keys on the PC at the time you want to mark a certain point.

To do marking while sampling is stopped or after a save, move the graph cursor and press one of the number keys, alphabet keys or symbol keys on the PC at the position you want to mark a certain point.

Marking numbers are automatically assigned in the order the key on the PC is pressed.



SMU-00461

### NOTE:

- If the keys on the PC are pressed faster than the sampling speed, the marking may not be displayed in numerical order.
- Marking is not possible with some keys.

## Marking Delete Function

You can delete markings.

There are two following methods to delete markings.

1) Deleting from marking edit screen

2) Deleting by PC keyboard

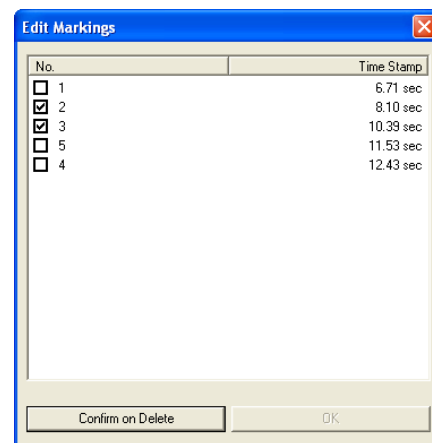
### Deleting from Marking Edit Screen

1. Display a graph on the screen and select "Edit Markings" from "Tool" in menu.



SMU-00853

2. This displays an Edit Markings screen. Put a check mark in the marking number to be deleted and then click the [Confirm on Delete] button.



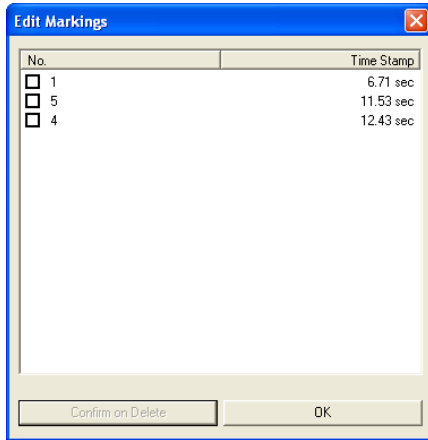
SMU-00854



**NOTE:**

- Clicking the [Confirm on Delete] causes markings on the edit screen to be deleted. However, markings on the graph are not deleted at this time.
- You can also select (check) the checkbox by pressing the space bar on the PC keyboard.

- Click the [OK] button to close the edit screen. Markings on the graph screen will be deleted as soon as the edit screen is closed.



SMU-00855

**Deleting by PC Keyboard**

- Display a graph on the screen and move a cursor to the marking to be deleted.
- Press one of the number keys, alphabet keys or symbol keys on the PC.

**NOTE:**

Deleting marking is not possible with some keys.


**Changing the Graph Sequence**

The sequence that the graphs appear on the display can be changed as desired.



Select the graph you want to move. Next, while holding down both the Ctrl key and Shift key on the PC keyboard, press the up or down arrow key to move the selected graph upwards or downwards.

**Initializing the Graph Sequence**

The graphs' sequence shown on the display can be initialized.

Clicking the  icon on the Data List Toolbar makes the graphs go back to their initial positions.

**Printing Sampled Data**

When there is no sampling operation being performed, click the [File] menu and then select [Print]. You can also print by clicking the  icon on the Data List Toolbar, by clicking the  button on the Function Key Bar, or by pressing the F8 function key on the PC keyboard.



**Previewing the Print Image**

When there is no sampling operation being performed, click the [File] menu and then select [Print Preview].

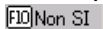
**Setting Up the Printer**

When there is no sampling operation being performed, click the [File] menu and then select [Setup printer].

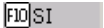
**Saving Sampled Data**

When there is no sampling operation being performed, click the  icon on the Data List Toolbar, or the  button on the Function Key Bar. You could also press the F9 function key on the PC keyboard.

**Using Non-SI Units to Display Sampled Data**

When there is no sampling operation being performed, click the  button on the Digital Data Screen or Graph Screen Function Key Bar, or press the F10 function key on the PC keyboard to display the sampled data using the currently selected non-SI display units.

**NOTE:**


- To use this function, the desired display units should be selected using the window that appears when the [Tool] menu [Option] command is executed.
- To return to SI unit display, click the  button on the Function Key Bar or press the F10 function key on the PC keyboard.



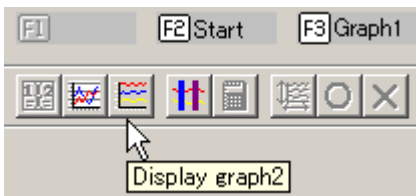
## Returning to the Fault Diagnosis Menu Screen

When there is no sampling operation being performed, click the return icon on the Data List Toolbar or the **[F2]Exit** button on the Function Key Bar. You can also return to the previous screen by pressing the F12 function key on the PC keyboard.

## Graph 2 Screen (Single-screen 8-channel Graph)

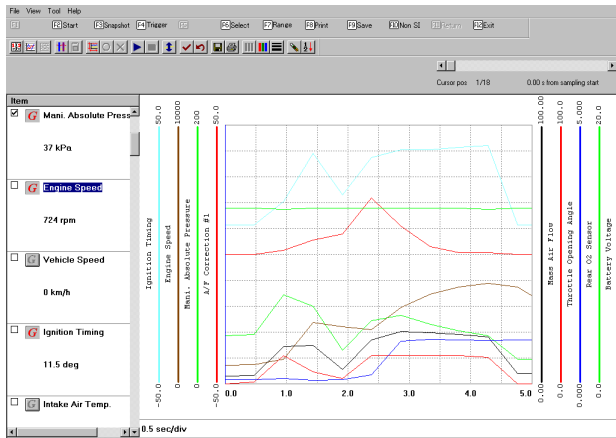
If a sampling operation is being performed, stop it. On the Digital Data Screen, click the  icon on the Data List Toolbar or click the **[F3]Graph1** button on the Function Key Bar twice to display Graph 2 Screen. Each press of the [F3] button on the Function Key Bar cycles in the following sequence: → [F3 Graph1] → [F3 Graph2] → [F3 Snapshot] →.

You can also display the Graph 2 Screen by pressing the F3 function key on the PC keyboard twice.



SMU-00587

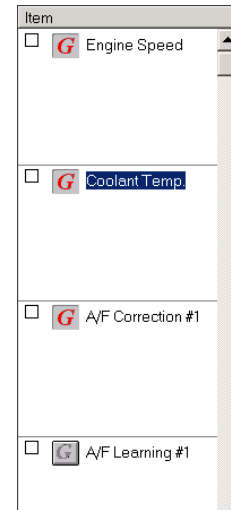
### Graph 2 Screen



SMU-00588

Clicking the [G] button in front of an item causes the [G] button color to change to red, and displays the name of the item to be displayed for the vertical axis in the graph area.

To cancel an item selection, click its [G] button again.



SMU-00214

### NOTE:


- You can display data for up to eight items on a single screen.
- The location of item axes depends on the sequence the items are selected. The first four items that are selected are displayed to the left of the graph, while the fifth through eighth items selected are displayed to the right.
- You can use the same procedures as those for Graph 1 Screen, to start and stop sampling, to move the graph cursor, to display data select, to change the range, to change the graph line color and thickness, marking function, etc.

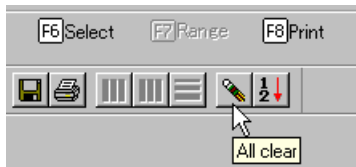


## Setting All Clear Function

All of the following settings can be returned to their initial status:

- Item sequence: default setting on each models
- Data Select Screen: all items not selected
- Horizontal axis range of Graph Screen: default setting on each item
- Vertical axis range of Graph Screen: 0.5 sec/div
- Graph line color of Graph Screen: all red
- Graph line thickness of Graph Screen: 1 point
- Trigger function: without trigger
- Two Cursor Analysis: end of Two Cursor Analysis

While sampling is stopped, click the  icon on the Data List Toolbar.



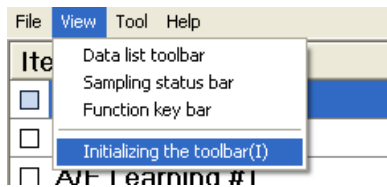
SMU-00694

## Functions for Initializing Toolbars

It is possible to initialize the display on each toolbar. If you initialize the toolbars, the display will be shown as follows:

- Display or not: Displays all toolbars.
- Position of display: Initial display position.

For initializing the toolbars, select "Initializing the toolbar" from "View" on the menu.



SMU-00867



## Sampling Item Memory

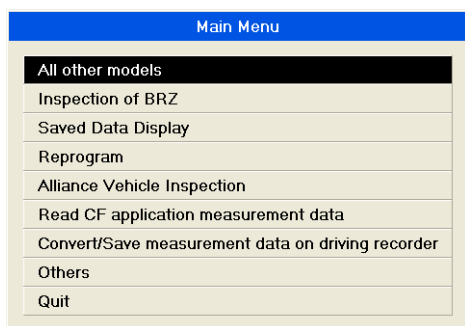
Sampling item memory can be used to configure required sampling items for each abnormality symptom. Then setting files can be read as required for sampling.

### NOTE:

- The setting files described above are called "mode files".
- This function may not be available in the case of certain vehicle models and vehicle specifications.

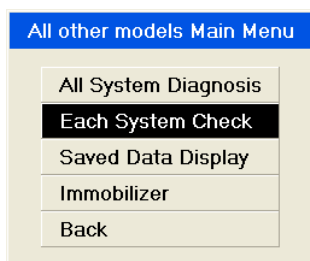
## Creating a Mode File

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



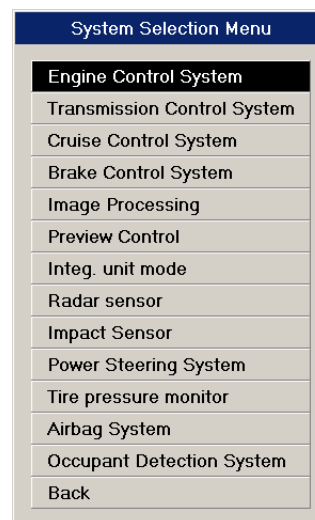
SMU-01294

3. Select [Each System Check] at the item selection screen.



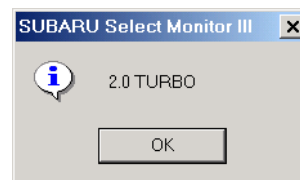
SMU-01296

4. On the System Selection Menu, select [Engine Control System] and then press the Enter key or left click with the mouse.



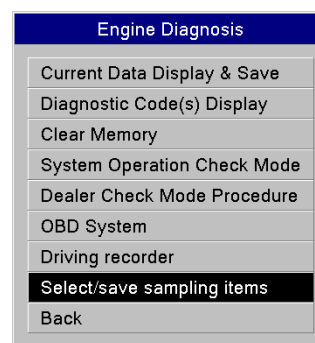
SMU-00665

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00128

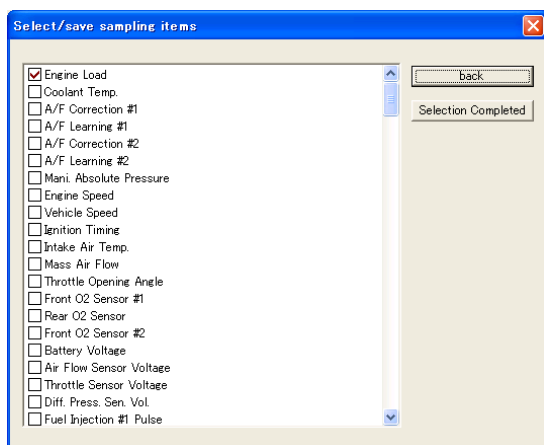
6. From the list of fault diagnosis items, select [Select/save sampling items] and then press the Enter key or left-click with the mouse.



SMU-00499



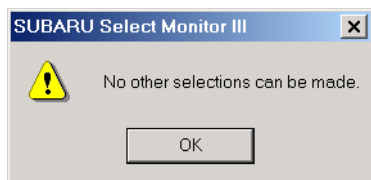
7. This displays a sampling item selection screen. Select the required sampling item and then click, [Selection Completed].



SMU-00500

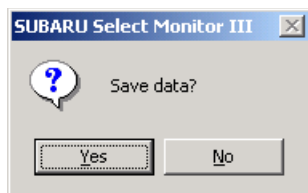
#### NOTE:

If the message dialog box shown below appears while you are selecting data items, it means that the limit on the number of selectable data items has been reached. Selection of further data items is not possible after this message appears. To select other items, deselect the check boxes next to the currently selected (checked) items, and then select the new items.



SMU-00154

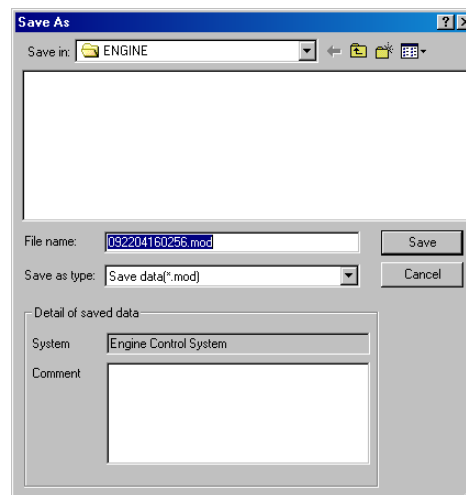
8. This displays a save confirmation dialog box. Click the [Yes] button.



SMU-00501

9. This causes save dialog box of the mode files to appear.

The name of the data file being saved is generated automatically in accordance with the current time and date. If you want to use the generated file name as-is, click the dialog box [Save] button. If you want to change to a different file name, type in the name you want.



SMU-00502

#### NOTE:

- Mode files are saved in one of the folders shown below, which are located in the directory where the PC application was installed.  
Data folder → Engine or Transmission folder.  
To change to another storage location, specify the location you want in the Save in box of the Save As dialog box.
- The Comment box of the Save As dialog box can be used to save general comments associated with the data or file.

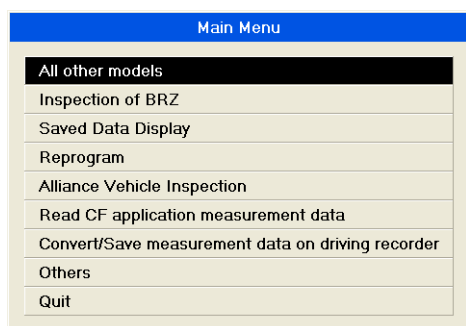


## Reading a Mode File for Sampling

### NOTE:

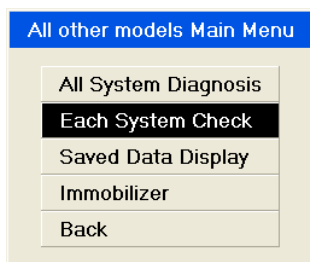
This function may not be available in the case of certain vehicle models and vehicle specifications.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



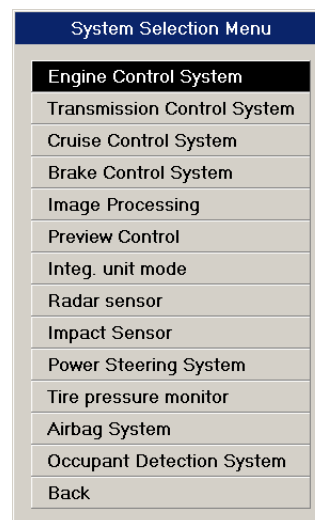
SMU-01294

3. Select [Each System Check] at the item selection screen.



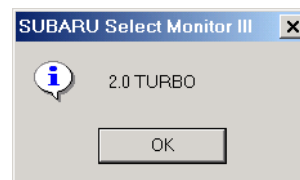
SMU-01296

4. On the System Selection Menu, select [Engine Control System] and then press the Enter key or left click with the mouse.



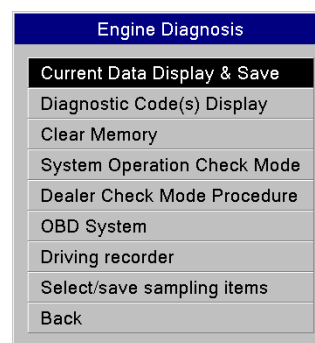
SMU-00665

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00128

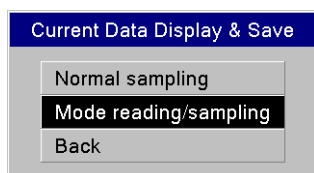
6. From the list of fault diagnosis items, select [Current Data Display & Save] and then press the Enter key or left-click with the mouse.



SMU-00503

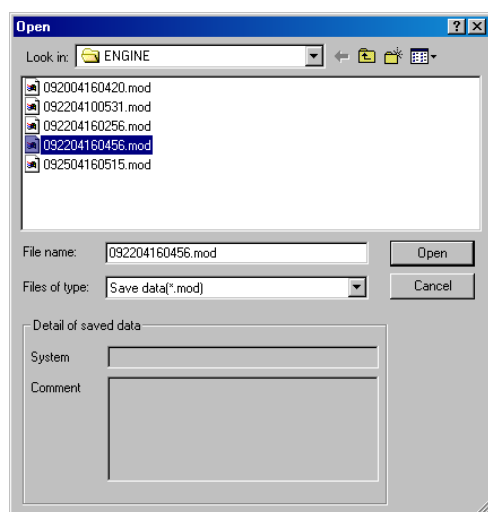


7. This displays the dialog box shown below. Select {Mode reading/sampling} and then press the Enter key or left-click with the mouse.



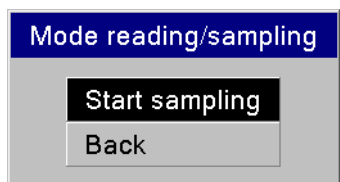
SMU-00504

8. This displays a dialog box with a list of saved files. Select the desired file and then press the Enter key or click [Open].



SMU-00505

9. This displays a sampling start confirmation screen. Click the [Start sampling] button.



SMU-00506

10. This displays the digital data screen.

You can start and stop sampling and perform other operations using the same procedures as those described under "Current Data Display and Save". For details about these operations, see "Current Data Display and Save".

 A screenshot of the digital data screen showing a table of sensor data. The table has columns for Item, Value, Unit, Maximum, Minimum, and Average. The data is for 133 samples over 11.76 seconds.
 

Item	Value	Unit	Maximum	Minimum	Average
✓ Coolant Temp	91	°C	91	50	50
✓ A/F Correction #1	-1.6	%	-0.8	-1.6	-1.6
✓ A/F Learning #1	-5.5	%	-5.5	-5.5	-5.5
✓ Mani. Absolute Pressure	35	kPa	37	35	35
✓ Engine Speed	715	rpm	744	700	721
✓ Vehicle Speed	0	km/h	0	0	0
✓ Ignition Timing	13.0	deg	13.5	8.5	11.5
✓ Intake Air Temp	53	°C	53	53	53
✓ Mass Air Flow	2.92	g/s	3.09	2.83	2.93
✓ Throttle Opening Angle	0.0	%	0.0	0.0	0.0
✓ Rear O2 Sensor	0.080	V	0.105	0.075	0.085
✓ Battery Voltage	13.5	V	13.6	13.4	13.4
✓ Air Flow Sensor Voltage	1.18	V	1.24	1.16	1.20
✓ Fuel Injection #1 Pulse	2.05	ms	2.30	2.05	2.05
✓ Knocking Correction	0.0	deg	0.0	0.0	0.0
✓ Atmosphere Pressure	100	kPa	100	100	100
✓ Mani. Relative Pressure	-65	kPa	-63	-65	-65
✓ Primary Control	0.0	%	0.0	0.0	0.0
✓ CPC Valve Duty Ratio	0	%	0	0	0
✓ Fuel Pump Duty	33	%	33	33	33
✓ A/F Sensor #1 Current	-0.38	mA	0.25	-0.63	-0.13
✓ A/F Sensor #1 Resistance	27	ohm	27	26	26

SMU-00589

#### NOTE:

To display all data after reading a mode file, click the icon on the Data List Toolbar or the button on the Function Key Bar. You can also display to the all data screen by pressing the F11 function key on the PC keyboard.

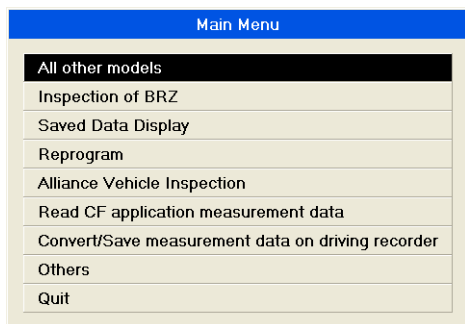


## Trigger

The trigger feature lets you configure a trigger to be applied while sampling is in progress. There are two types of triggers that can be configured: an “Trigger of input data” that automatically detects the trigger in accordance with pre-set parameters, and a “Manual trigger” that is triggered manually. When sampling is performed using a trigger, data is stored from the start of the sampling until the specified time from trigger detection elapses.

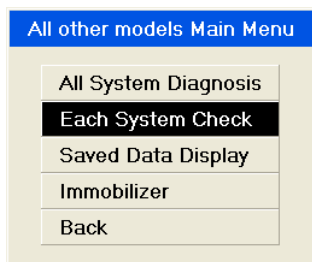
## Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



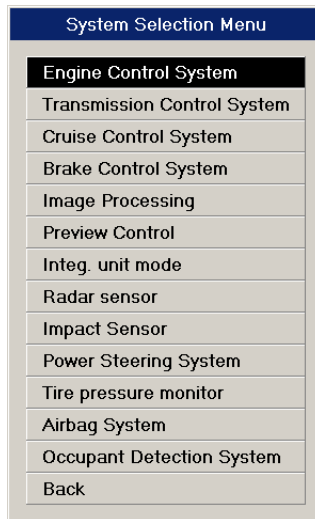
SMU-01294

3. Select [Each System Check] at the item selection screen.



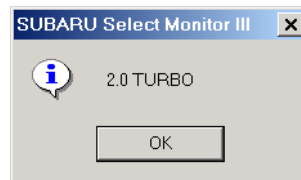
SMU-01296

4. On the System Selection Menu, select the desired system and then press the Enter key or left-click with the mouse. (As an example, “Engine Control System” is selected.)



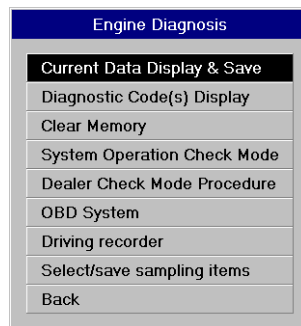
SMU-00665

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00128

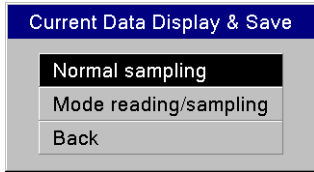
6. From the list of fault diagnosis items, select [Current Data Display & Save] and then press the Enter key or left-click with the mouse.



SMU-00601



7. This displays the dialog box shown below. Select [Normal sampling] and then press the Enter key or left-click with the mouse. (As an example, "Normal sampling" is selected.)




SMU-00508

8. This displays the Digital Data Screen, so sampling is stopped.

The trigger function can be used while the Digital Data Screen, Graph 1 Screen, or Graph 2 Screen is displayed.

Item	Value	Unit	Maximum	Minimum	Average
<input checked="" type="checkbox"/> Coolant Temp.	96	°C	96	94	95
<input type="checkbox"/> A/F Correction #1	-0.8	%	0.8	-0.8	-0.8
<input type="checkbox"/> A/F Learning #1	-6.3	%	-6.3	-6.3	-6.3
<input type="checkbox"/> Mani. Absolute Pressure	39	kPa	41	35	36
<input type="checkbox"/> Engine Speed	723	rpm	739	674	720
<input type="checkbox"/> Vehicle Speed	0	km/h	0	0	0
<input type="checkbox"/> Ignition Timing	11.5	deg	15.0	9.5	11.5
<input type="checkbox"/> Intake Air Temp.	60	°C	60	60	60
<input type="checkbox"/> Mass Air Flow	3.20	g/s	3.47	2.83	2.98
<input type="checkbox"/> Throttle Opening Angle	0.0	%	0.0	0.0	0.0
<input type="checkbox"/> Rear O2 Sensor	0.080	V	0.110	0.065	0.080
<input type="checkbox"/> Battery Voltage	13.4	V	13.4	12.9	13.3
<input type="checkbox"/> Air Flow Sensor Voltage	1.22	V	1.28	1.18	1.20
<input type="checkbox"/> Throttle Sensor Voltage	0.56	V	0.56	0.56	0.56
<input type="checkbox"/> Fuel Injection #1 Pulse	2.30	ms	2.56	2.30	2.30
<input type="checkbox"/> Knocking Correction	0.0	deg	0.0	0.0	0.0
<input type="checkbox"/> Atmosphere Pressure	100	kPa	100	100	100
<input type="checkbox"/> Mani. Relative Pressure	-61	kPa	-59	-65	-64
<input type="checkbox"/> Fuel Tank Pressure	0.15	kPa	0.17	0.15	0.15
<input type="checkbox"/> Fuel Temp.	27	°C	27	27	27
<input type="checkbox"/> Fuel Level	0.80	V	0.80	0.76	0.78
<input type="checkbox"/> Primary Control	0.0	%	0.0	0.0	0.0

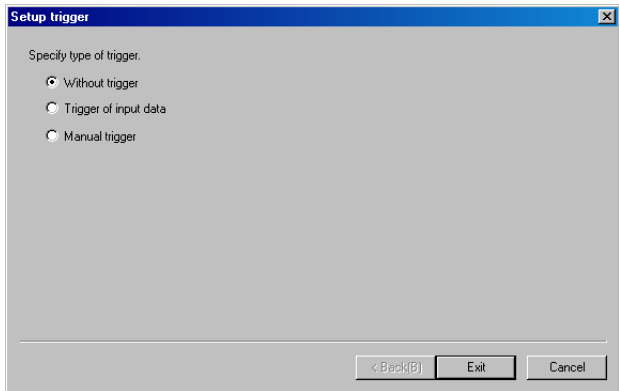
SMU-00646

9. Click the  icon on the Data List Toolbar, or the **F4 Trigger** button on the Function Key bar. You could also press the F4 function key on the PC keyboard.



SMU-00649

10. This displays the setup trigger screen.



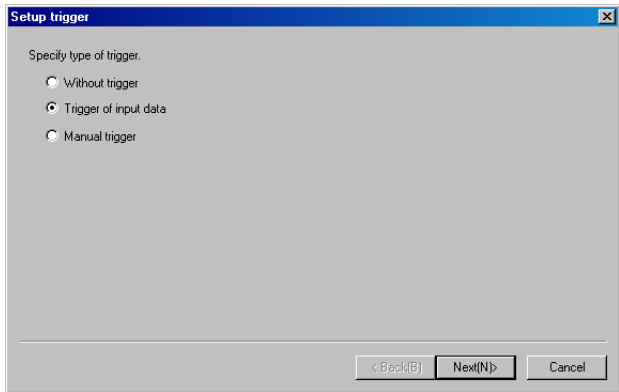
SMU-00650

- 1) Without trigger  
Triggering is not performed. Select this option when you want to cancel the trigger function.
- 2) Trigger of input data  
This setting is used to configure trigger settings for each sampling item for automatic trigger detection.
- 3) Manual trigger  
With Manual trigger, triggering is performed manually by pressing the trigger switch during data sampling.

## Configuring Trigger of input data Settings

Configuring triggers to necessary items in advance automatically detects triggers.

1. On the Specify type of trigger screen, select "Trigger of input data" and then click the [Next] button.

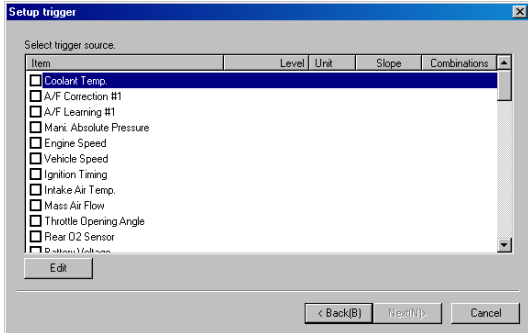


SMU-00651



## 2. Specify the trigger source.

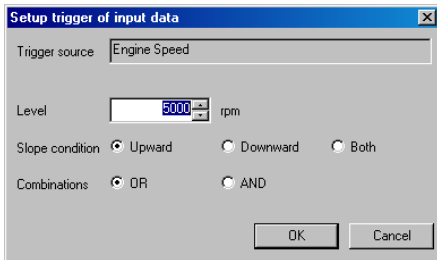
In the list, select the checkbox next to the item whose setting you want to change, or double-click the item.



SMU-00652

3. This displays the Setup trigger of input data screen. Configure the settings and then click the [OK] button.

When a sampling item is not switch input



SMU-00653

### 1) Level

This specifies the trigger level, the value that detects triggers. You can input a value directly into the box or you can use its up and down arrows to change the setting. The setting value is limited to values that can actually be obtained. If you type in a value that cannot be obtained, the software will automatically change it to the nearest allowable value.

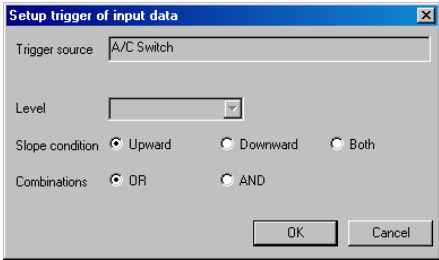
### 2) Slope condition

This setting specifies the condition for trigger detection when the sample data values reach the trigger level. When [Both] is selected, a trigger is detected when either a Upward or Downward condition is first satisfied.

### 3) Combinations

When there are multiple triggers, these settings can be used to configure combinations.

When a sampling item is switch input



SMU-00654

### 1) Level

This specifies the trigger level, the value that detects triggers. The setting is configured by button operation. This setting cannot be selected for certain sampling items.

### 2) Slope condition

This setting specifies the data condition for trigger detection when the sample data values reach the trigger level.

Selecting [Upward] detects a trigger at the OFF → ON point.

Selecting [Downward] detects a trigger at the ON → OFF point.

Selecting [Both] detects a trigger at either the OFF → ON point or the ON → OFF point, whichever occurs first.

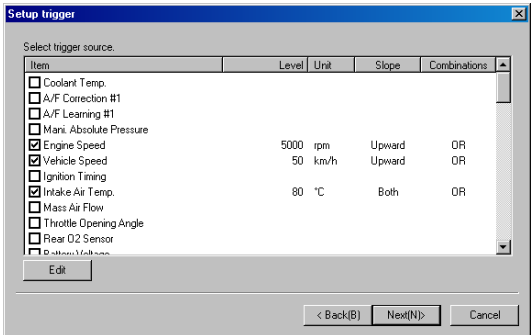
### 3) Combinations

When there are multiple triggers, these settings can be used to configure Combinations.

4. Checkboxes of the channels to which you set triggers are checked.

If you want to configure multiple triggers, repeat steps 2 and 3.

After configuring all of the triggers you want, click the [Next] button.



SMU-00655



NOTE:

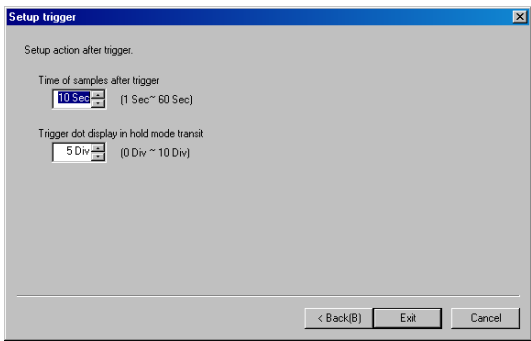
- To change a trigger setting, select the desired item and then click the [Edit] button to display the Setup trigger of input data screen.
- To exclude the setting of an item that is currently configured for a trigger, clear the check box of the applicable item.
- If the message dialog box shown below appears while you are configuring an item setting, it means that the limit on the number of selectable items has been reached. Selection of further data items is not possible after this message appears. To select other items, deselect the check boxes next to the currently selected (checked) items you no longer need, and then select another item to which you want to assign a trigger.



SMU-00154

5. Setup the action that should be performed after a trigger is detected.

Configure the settings and then click the [Exit] button.



SMU-00656

1) Time of samples after trigger

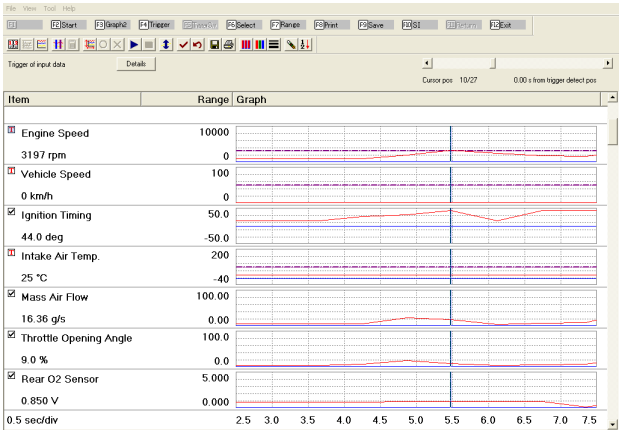
This setting is the sampling time after the trigger is detected.

2) Trigger dot display in hold mode transit

This setting specifies the display position of the trigger detection point (trigger point) when the graph is displayed following sampling.



6. This will display the measurement screen and automatically start sampling. If the trigger is detected

during sampling, data is collected for the specified time and then sampling stops automatically.



SMU-00770

NOTE:

- Assigning an input trigger to an item causes "T" to appear in item's checkbox.
- Manual trigger can still be used even if input trigger sampling is in progress. In this case, the sampling time after trigger detection is the same time set for the Trigger of input data.
- Clicking the  icon on the Data List Toolbar during sampling will terminate sampling immediately, regardless of whether or not there is a trigger. This is also true if the Function Key Bar  button is clicked or the F2 function key on the PC keyboard is pressed.
- On the graph, the trigger level is indicated as a purple chain lines, while the trigger points are indicated by vertical green chain lines.
- Trigger information is displayed on the left side of the Sampling Status Bar. Clicking the [Details] button displays an Information of trigger of input data screen, which you can use to view detailed information about the currently assigned trigger.

Information of trigger of input data				
Item	Level	Unit	Slope	Combinations
Engine Speed	5000	rpm	Upward	OR
Vehicle Speed	50	km/h	Upward	OR
Intake Air Temp.	80	°C	Both	OR

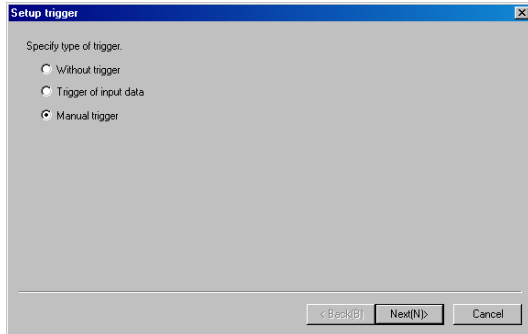
SMU-00658



## Configuring a Manual Trigger

With a Manual trigger, trigger detection is not performed automatically and a trigger is applied whenever the trigger switch is pressed.

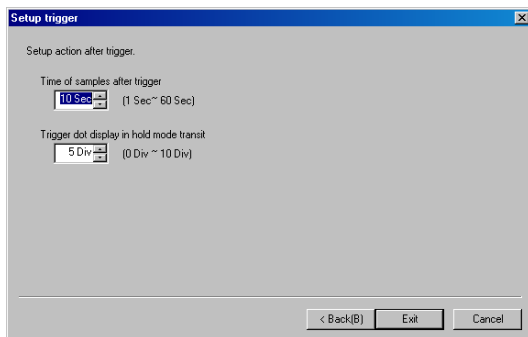
1. On the Specify type of trigger screen, select "Manual trigger" and then click the [Next] button.



SMU-00659

2. Setup the action that should be performed after a trigger is detected.

Configure the settings and then click the [Exit] button.

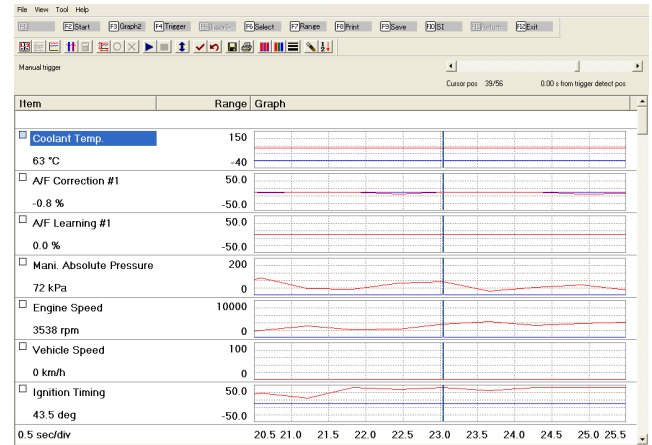


SMU-00656

- 1) Time of samples after trigger  
This setting is the sampling time after the trigger switch is pressed.
- 2) Trigger dot display in hold mode transit  
This setting specifies the display position of the trigger switch press point (trigger point) when the graph is displayed following sampling.
3. This will display the measurement screen and automatically start sampling.

When sampling reaches the point where you want to apply the trigger, click the **F5 Trigger SW** button on the Function Key Bar or the F5 function key on your PC keyboard. After you do, data is collected

for the specified time and then sampling stops automatically.



SMU-00771

### NOTE:

- Clicking the **F2 Hold** icon on the Data List Toolbar during sampling will terminate sampling immediately, regardless of whether or not there is a trigger. This is also true if the Function Key Bar **F2 Hold** button is clicked or the F2 function key on the PC keyboard is pressed.
- On the graph, trigger points are shown as vertical green chain lines.
- Trigger information is displayed on the left side of the Sampling Status Bar.



## Two Cursor Analysis

Two Cursor Analysis is provided with two functions: display cursor numerical value information between two points, and cut-and-save data.

As cursor numerical value information between two points, the numerical values of any two points in the sampled data, and the maximum value, minimum value and average value between two points can be calculated and displayed.

For cut-and-save of data, the between any two points in the sample data can be cut and save.

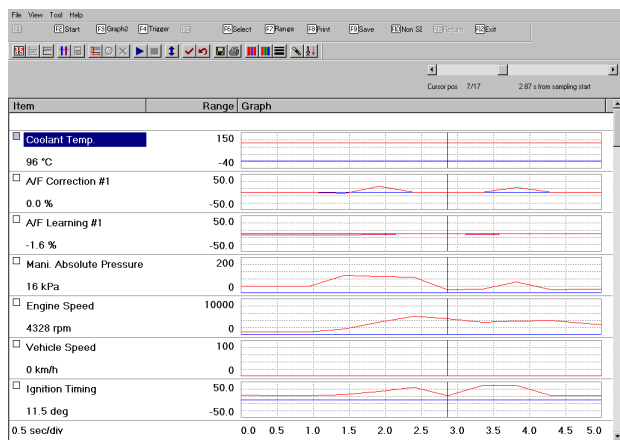
### Cursor Numerical Value Information between Two Points

Cursor numerical value information between two points can be used in the digital data screen, and either of the Graph 1 Screen or Graph 2 Screen. Note, however, that on the Graph 1 Screen or Graph 2 Screen, only selected sampling items are displayed, and on the digital data screen, all sampling items are displayed.


Cursor numerical value information between two points can also be used when saved data is re-displayed.

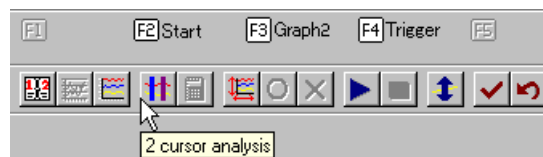
### Displaying Numerical Value Information on a Graph Screen

1. Display the Graph Screen. (The following explanation is for the Graph 1 Screen.)



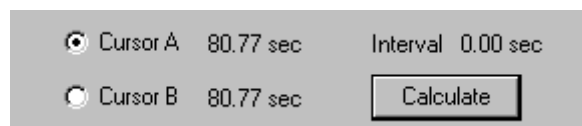
SMU-00705

2. Click the  icon on the Data List Toolbar.



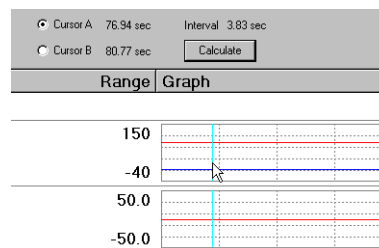
SMU-00707

3. The cursor selection buttons, cursor position times, cursor interval and [Calculate] button are displayed on the Sampling Status Bar.



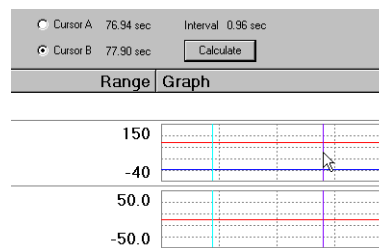
SMU-00708

4. The cursor selection button "Cursor A" is selected. Move graph Cursor A (light blue) to the desired position.




SMU-00709

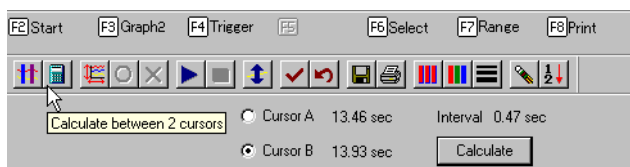
5. Select "Cursor B" by the cursor selection button. Move graph Cursor B (purple) to the desired position.



SMU-00710



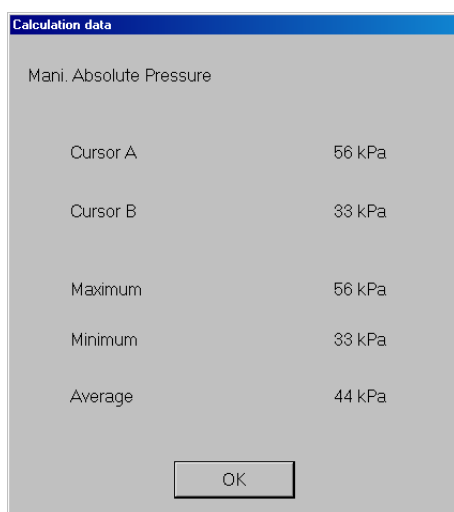
6. After selecting the sampling item, click the  icon on the Data List Toolbar or the [Calculate] button on the Sampling Status Bar.




SMU-00712

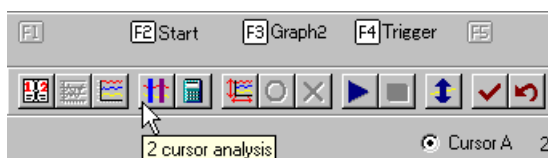
7. This displays the numerical value information screen.

To close this screen, click the [OK] button.



SMU-00713

8. To exit the Two Cursor Analysis function, click the  icon again.




SMU-00714

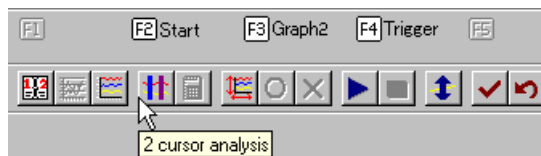
## Displaying Numerical Value Information on the Digital Data Screen

1. Display the digital data screen.

Item	Value	Unit	Maximum	Minimum	Average
Coolant Temp	96	°C	96	94	95
A/F Correction #1	-0.8	%	0.8	-0.8	-0.8
A/F Learning #1	-6.3	%	-6.3	-6.3	-6.3
Mani. Absolute Pressure	39	kPa	41	35	36
Engine Speed	723	rpm	739	674	720
Vehicle Speed	0	km/h	0	0	0
Ignition Timing	11.5	deg	15.0	9.5	11.5
Intake Air Temp	60	°C	60	60	60
Mass Air Flow	3.20	g/s	3.47	2.83	2.98
Throttle Opening Angle	0.0	%	0.0	0.0	0.0
Rear O2 Sensor	0.080	V	0.110	0.065	0.080
Battery Voltage	13.4	V	13.4	12.9	13.3
Air Flow Sensor Voltage	1.22	V	1.28	1.18	1.20
Fuel Injection #1 Pulse	2.30	ms	2.56	2.30	2.30
Knocking Correction	0.0	deg	0.0	0.0	0.0
Atmosphere Pressure	100	kPa	100	100	100
Mani. Relative Pressure	-61	kPa	-59	-65	-64
Primary Control	0.0	%	0.0	0.0	0.0
CPC Valve Duty Ratio	0	%	0	0	0
Fuel Pump Duty	33	%	33	33	33
A/F Sensor #1 Current	-0.25	mA	0.25	-0.38	-0.13
A/F Sensor #1 Resistance	27	ohm	28	26	26

SMU-00715

2. Click the  icon on the Data List Toolbar.

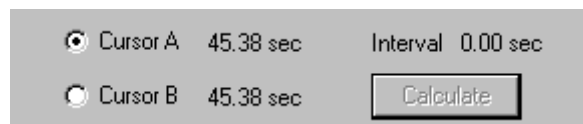


SMU-00707

### NOTE:

- When displaying the cursor information between two points, the data value of the currently selected cursor position is displayed as the display value in the value field.
- When displaying the cursor information between two points, the values between cursors A and B and not the value from the sampling start point are displayed as the display value for the maximum, minimum and average values.

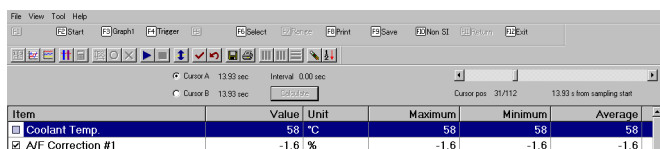
3. The cursor selection buttons, cursor position times and cursor interval are displayed on the Sampling Status Bar.



SMU-00716



4. The cursor selection button “Cursor A” is selected. Move Cursor A to the desired position with “Cursor A” selected as it is.

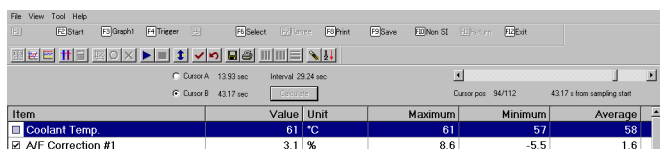


SMU-00717

**NOTE:**

In the digital data screen, the cursor is not displayed. So, check the cursor position by the cursor position time to the side of the cursor selection button.

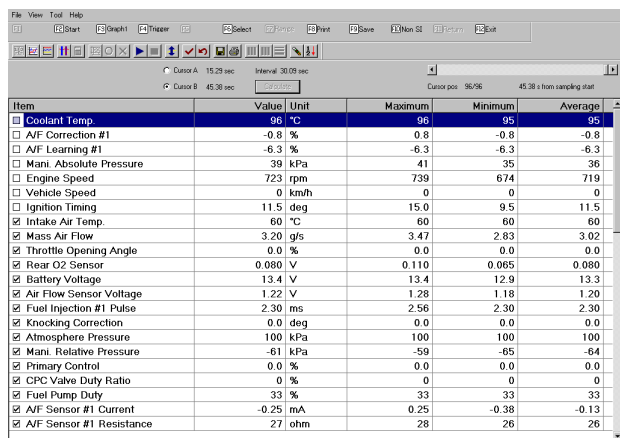
5. Select “Cursor B” by the cursor selection button, and move Cursor B to the desired position.




SMU-00718

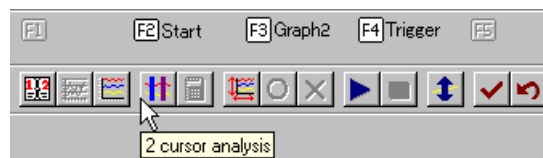
6. Check the numerical value information between the two cursors.

In the digital data screen, the numerical value information of all sampling items is calculated to linear information and displayed when you move the cursor position.



SMU-00719

7. To exit the Two Cursor Analysis function, click the  icon again.

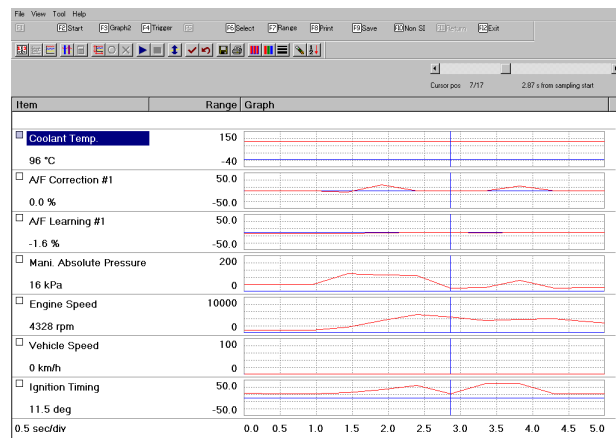


SMU-00707

**Data Cut-and-Save**

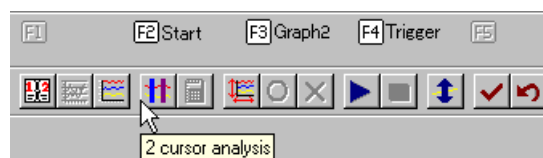
Data cut-and-save can be used in the digital data screen, and either of the Graph 1 Screen or Graph 2 Screen.

1. Display the sampling screen. (The following explanation is for the Graph 1 Screen.)



SMU-00705

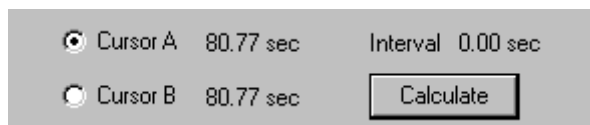
2. Click the  icon on the Data List Toolbar.



SMU-00707

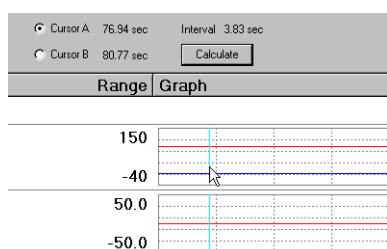


3. The cursor selection buttons, cursor position times, cursor interval and [Calculate] button are displayed on the Sampling Status Bar.



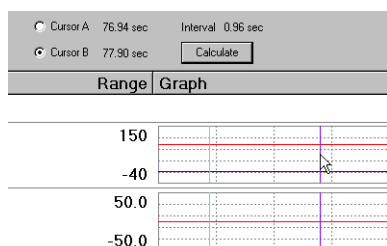
SMU-00708

4. The cursor selection button “Cursor A” is selected. Move graph Cursor A (light blue) to the desired position.




SMU-00709

5. Select “Cursor B” by the cursor selection button. Move graph Cursor B (purple) to the desired position.



SMU-00710

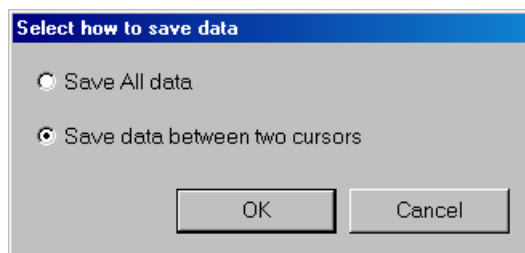
6. Click the  icon on the Data List Toolbar or the **[F9] Save** button on the Function Key Bar. You could also press the F9 function key on the PC keyboard.



SMU-00720

7. This displays the Select how to save data screen.

Select “Save data between two cursors” and click the [OK] button.

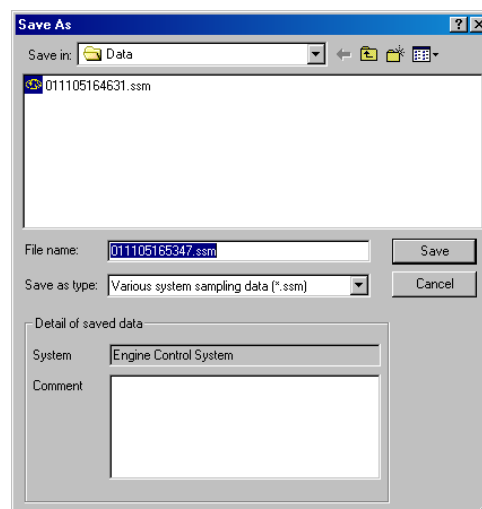


SMU-00721

#### NOTE:

If you select “Save All data” at this time, cut-and-save will not be performed, and all sampled data will be saved.

8. This causes the sampled data save dialog box to appear. The name of the data file being saved is generated automatically in accordance with the current time and date. If you want to use the generated file name as-is, click the dialog box [Save] button. If you want to change to a different file name, type in the name you want.



SMU-00722



**NOTE:**

- Sample data files are saved in the Data folder where the PC application is installed. To change to another storage location, specify the location you want in the Save in box of the save data dialog box.
- The Comment box of the Save As dialog box can be used to save general comments associated with the data or file.
- When performing cut-and-save on selected data in a file containing all data, the save file name cannot be set to the same name as the save file containing all data before the cut is performed, and cannot be saved.



## Converting Sampled Data to CSV

Converting sampled data to CSV format allows to analyze the data on a PC without SSMIII installed. Converting sampled data to CSV should be performed on the saved data analysis screen.

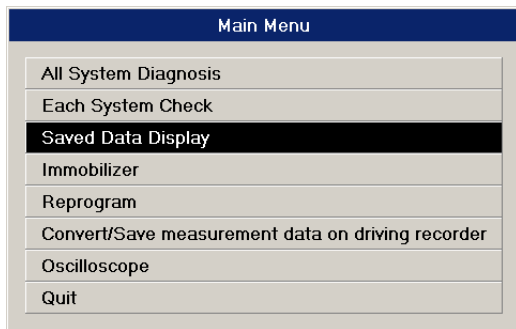
### NOTE:

Up to 50,000 sampled data can be saved as CSV file. For more than 50,000 sampled data, data cut-and-save can be used to reduce the number of data before converting to CSV.

## How to Convert to CSV from Menu

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.

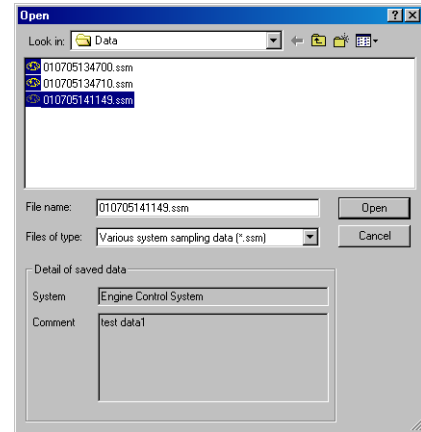
On the Main Menu that appears on the display, select [Saved Data Display] and then press the Enter key or left-click with the mouse.



SMU-00602

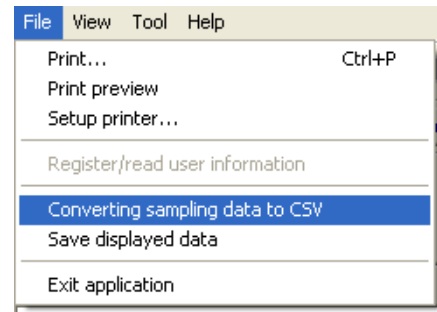
2. The dialog box with a list of saved data files is displayed.

After selecting "Files of type", designate the file you need, and press the Enter key or click the [Open] button.



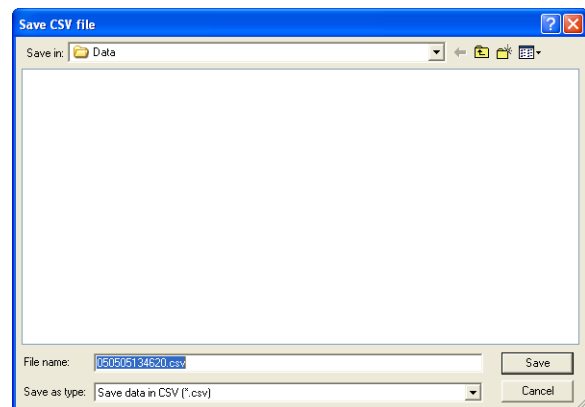
SMU-00697

3. This displays saved data. Select "Converting sampling data to CSV" from "File" in menu.



SMU-00824

4. This causes the Save CSV file dialog to appear. Enter the desired file name, and click the [Save] button.

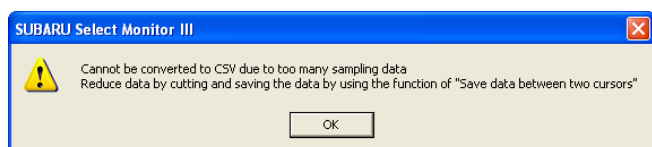


SMU-00825



**NOTE:**



- The file name in default setting will be the same name as saved data which is opened.
- CSV files are saved in the Data folder where the PC application is installed. To change to another storage location, specify the location you want in the Save in box of the save data dialog box.
- If the dialog shown below appears after clicking the [Save] button, reduce the number of data to be saved. In this case, convert to CSV in accordance with the procedure in “In the Case of Too Many Sampled Data”



SMU-00826

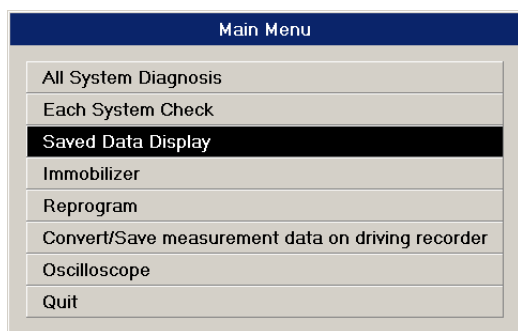
## How to Convert to CSV with Save Icon or Save Button

**NOTE:**

Converting to CSV with  icon or  button is effective only when making changes such as added marking etc.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.

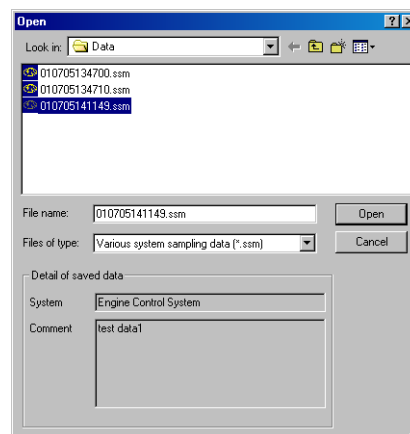
On the Main Menu that appears on the display, select [Saved Data Display] and then press the Enter key or left-click with the mouse.





SMU-00602

2. The dialog box with a list of saved data files is displayed.

After selecting “Files of type”, designate the file you need, and press the Enter key or click the [Open] button.



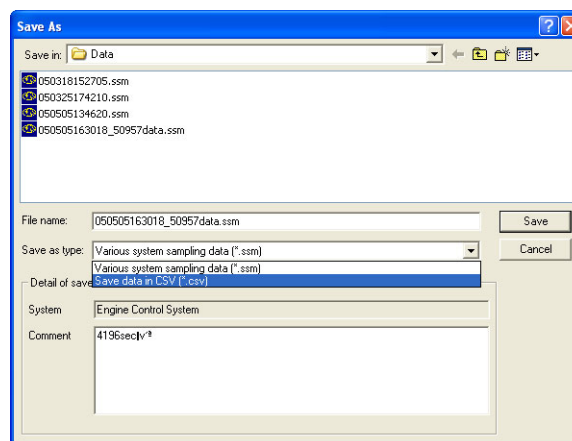
SMU-00697

3. Click the  icon on the Data List Toolbar, or the  button on the Function Key bar. You could also press the F9 function key on the PC keyboard.



SMU-00577

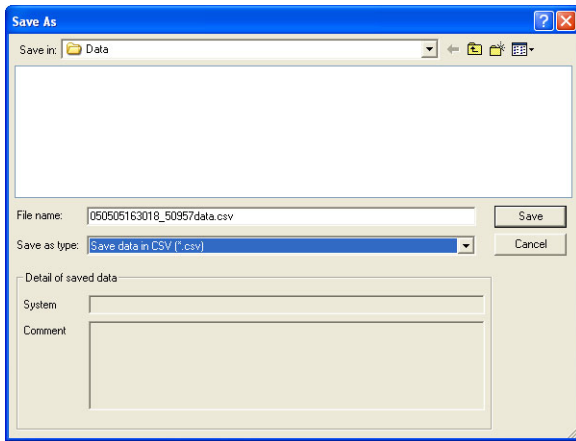
4. This displays a save dialog. Select “Save data in CSV (\*.csv)” in “Save as type”.



SMU-00827



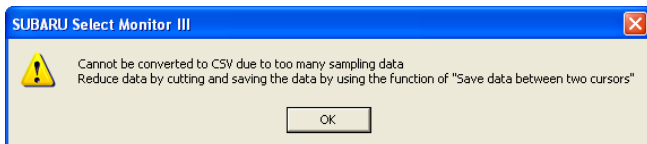
5. Enter the desired file name, and click the [Save] button.



SMU-00828

#### NOTE:

- The file name in default setting will be the same name as saved data which is opened.
- CSV files are saved in the Data folder where the PC application is installed. To change to another storage location, specify the location you want in the Save in box of the save data dialog box.
- If the dialog shown below appears after clicking the [Save] button, reduce the number of data to be saved. In this case, convert to CSV in accordance with the procedure in “In the Case of Too Many Sampled Data”



SMU-00826

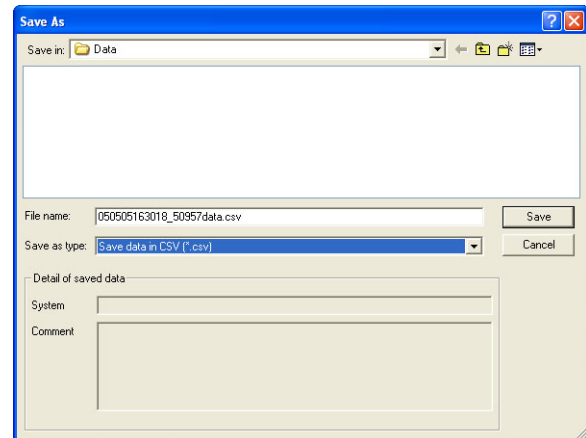
## In the Case of Too Many Sampled Data

Up to 50,000 data can be converted to CSV. In the case of more than this, use cut-and-save and convert data to CSV in accordance with the following procedure.

#### NOTE:

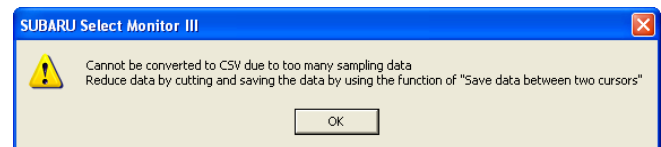
This describes how to convert to CSV with Save icon or Save button. However, you can also convert data to CSV by selecting “Converting sampling data to CSV” from “File” in menu.

1. Display a CSV file save dialog in accordance with the procedure described before, and click the [Save] button.



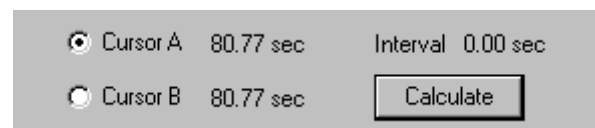
SMU-00828

2. This displays a dialog box below. Click the [OK] button.



SMU-00826

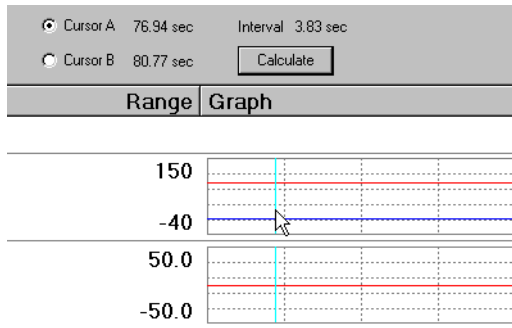
3. The cursor selection buttons, cursor position times, cursor interval and [Calculate] button are displayed on the Sampling Status Bar.



SMU-00708

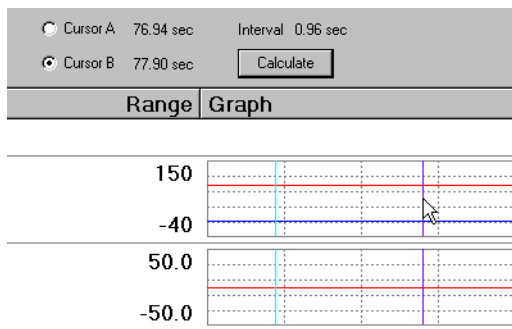


4. The cursor selection button “Cursor A” is selected. Move graph Cursor A (light blue) to the desired position.



SMU-00709


5. Select “Cursor B” by the cursor selection button. Move graph Cursor B (purple) to the desired position.



SMU-00710

**NOTE:**

At this time, look at the Sampling Status Bar to confirm that the number of data in selected range is less than 50,000.

6. Click the  icon on the Data List Toolbar, or the **[F9] Save** button on the Function Key bar. You could also press the F9 function key on the PC keyboard.



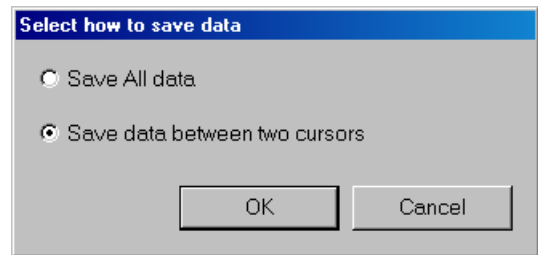
SMU-00720

**NOTE:**

The Select how to save data screen in the next step can be displayed by selecting “Converting sampling data to CSV” from “File” in menu.

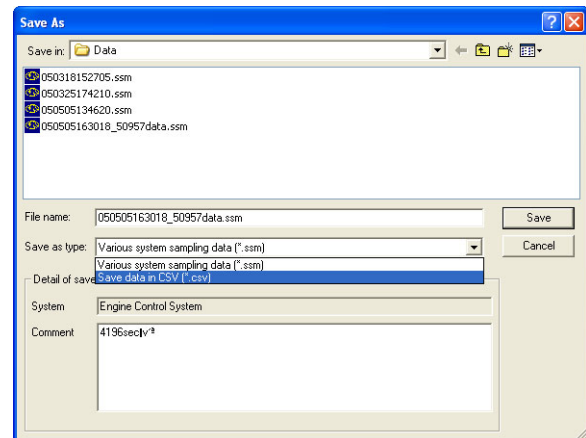
7. This displays the Select how to save data screen.

Select “Save data between two cursors” and click the [OK] button.



SMU-00721

8. This displays a save dialog. Select “Save data in CSV (\*.csv)” in “Save as type”.



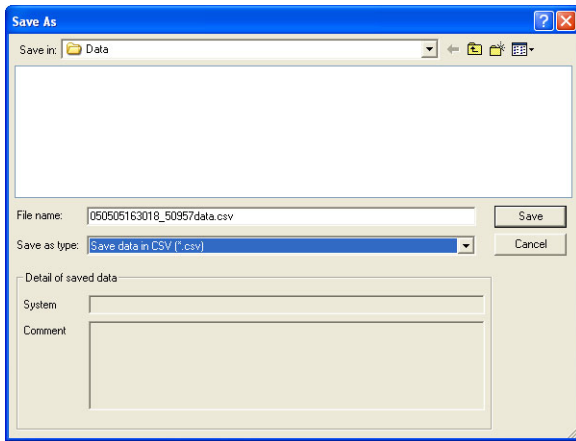
SMU-00827

**NOTE:**

If you select “Converting sampling data to CSV” from “File” in menu, this step is not necessary.



9. Enter the desired file name, and click the [Save] button.



SMU-00828

**NOTE:**

- The file name in default setting will be “date and time” at the time of saving. You can save data with the same file name as previous one when converting data to CSV even if you use cut-and-save. (The previous file is not overwritten because their extensions are different.)
- CSV files are saved in the Data folder where the PC application is installed. To change to another storage location, specify the location you want in the Save in box of the save data dialog box.



## Saving Displayed Data

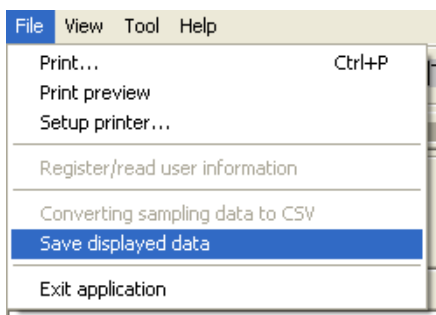
On the sampling screen or saved data display screen, you can save the screen as a graphic file.

### NOTE:

- Displayed data of sampling result display (except Roughness Monitor) can be saved.
- The data is saved in BMP (bitmap) format.

## How to Save

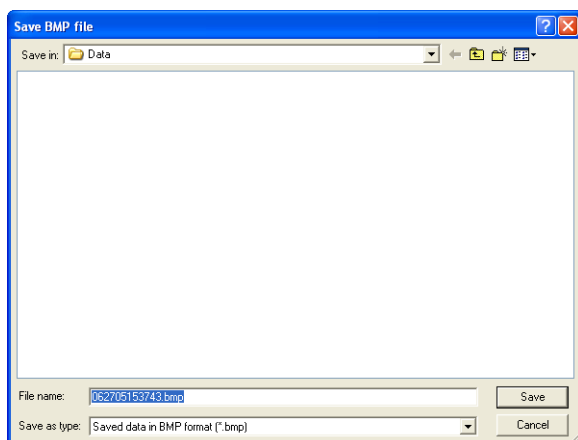
1. Display the sampling screen or saved data display screen. If you display the sampling screen, stop sampling.
2. Select “Save displayed data” from “File” in menu.



SMU-00829

3. This causes the displayed data save dialog to appear.

Enter the desired file name, and click the [Save] button in dialog box.



SMU-00830

### NOTE:

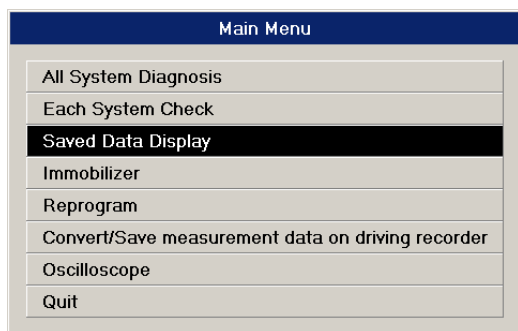
- The file name in default setting will be “date and time” at the time of saving sampled data if you save sampling data, and it will be the same name as saved data if you open the saved data.
- Screen data files are saved in the Data folder where the PC application is installed. To change to another storage location, specify the location you want in the Save in box of the save data dialog box.



## Saved Data Display

Use the following procedure to recall data that was saved during fault diagnosis and view it on the PC display.

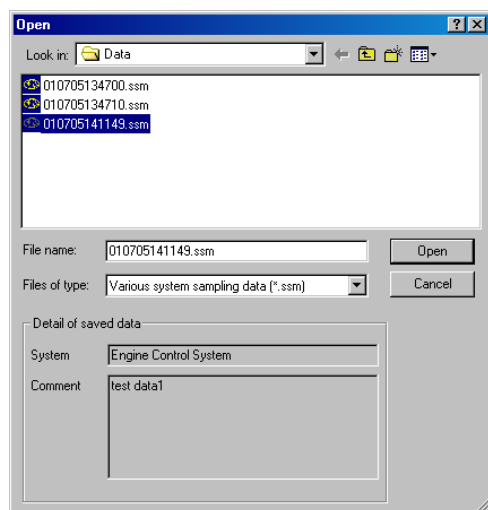
1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [Saved Data Display] at the displayed main menu.



SMU-00602

3. The dialog box with a list of saved data files is displayed.

After selecting "Files of type", designate the file you need, and press the Enter key or click the [Open] button.



SMU-00697

4. This recalls the data in the file and displays it on the Digital Data Screen.

### NOTE:

Supported data file name extensions are described below. Use the [Files of types] box to select the file type you want to view.

- .adt: This extension is used for a file that contains data saved by all systems diagnosis.
- .ssm: This extension is used for a file that contains data saved from the Digital Data Screen or Graph Screen.
- .obd: This extension is used for a file that contains data saved by OBD system failure diagnosis.
- .sdr: This extension is used for a file that contains data saved by driving recorder.
- .biu: This extension is used for a file that contains data saved a body integrated unit customizing list.
- .ocl: This extension is used for a file that contains data saved by analog sampling.
- .dpf: This extension is used for a file that contains data saved by maintenance mode.
- .trz: This extension is used for a file that contains data saved by TREZIA failure diagnosis.
- .jst: This extension is used for a file that contains data saved by JUSTY failure diagnosis.
- .js2: This extension is used for a file that contains data saved by JUSTY2 failure diagnosis.

To open saved data of alliance vehicle, after selecting the [Alliance Vehicle Inspection] on the Main Menu, designate the vehicle you need, and then select the [Saved Data Display].

The image shows a screenshot of the Digital Data Screen. It displays a table with columns: Item, Value, Unit, Maximum, Minimum, and Average. The data is as follows:

Item	Value	Unit	Maximum	Minimum	Average
<input checked="" type="checkbox"/> Coolant Temp	89	°C	89	89	89
<input checked="" type="checkbox"/> A/F Correction #1	-0.8	%	-0.8	-0.8	-0.8
<input checked="" type="checkbox"/> A/F Learning #1	-7.0	%	-7.0	-7.0	-7.0
<input checked="" type="checkbox"/> Mani. Absolute Pressure	35	kPa	36	35	35

SMU-00590



**NOTE:**

You can also view saved data by double clicking the sample data file.

Opening the folder where the data file is located and double-clicking the desired file will start up the PC application automatically and display the data's analysis screen. Note, however, that if you start up the PC application this way, you will not be able to change to the sampling screen. If you want to sample data, start up the PC application using the procedure under "Starting Up the System".

## Display Screen Operations

The Data List Toolbar buttons and the Sampling Status Bar functions on the saved data display screen are somewhat different from those on the Digital Data Screen and Graph Screen. The buttons and functions on the saved file display screen are designed to make it easy to find a desired location within the recalled data.

### Data Scroll Buttons

The data scroll buttons on the Data List Toolbar are for moving the graph cursor.

Clicking [<] or [>] scrolls back or forward by one data item. You can also scroll back or forward by 1 data item by pressing the left or right arrow key on PC keyboard.

Clicking [<<] or [>>] moves the graph cursor one screen back or forward.

You can also make the graph cursor jump back or forward by 10 data items by holding down the Ctrl key and pressing the left or right arrow key on the PC keyboard.



SMU-00220

### Data Cut-and-Save

After displaying previously saved sampling data, you can cut-and-save parts of the displayed data and store it in another file.

For information about how to do this, see "Two Cursor Analysis".

**NOTE:**

The name of the data file you take out from the original data CANNOT be the same as that of the original file.

In case of cutting and saving data, the file name must be changed to something different from the original file name.

## Other Operations


The marking function, cursor numerical value information between two points, range change, and other similar operations can be performed on recalled sample data using the same procedures you use during data sampling.

You can also save recall data, edit it, and store your edits.


## Multiple display of saved data

Multiple display of data saved by SSMIII on the screen of the personal computer is possible.

There are the following two operation methods for display.

- Display from the SSMIII icon on the screen of the personal computer.
- Display from the  icon on the Data list toolbar.

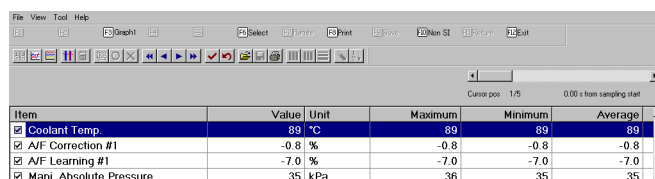
**NOTE:**

- Multiple display of saved files is possible for a maximum of five times.
- Multiple display of the high-grade roughness monitor saved file (.cym) cannot be done from the  icon on the data list toolbar.

## Display from the SSMIII icon on the screen of the personal computer

1. Display one of the targeted saved data.

For the display method, refer to the procedure in the section "Saved Data Display".



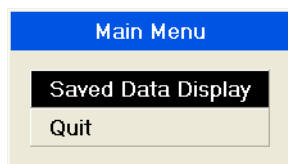
Item	Value	Unit	Maximum	Minimum	Average
<input checked="" type="checkbox"/> Coolant Temp.	89	°C	89	89	89
<input checked="" type="checkbox"/> A/F Correction #1	-0.8	%	-0.8	-0.8	-0.8
<input checked="" type="checkbox"/> A/F Learning #1	-7.0	%	-7.0	-7.0	-7.0
<input checked="" type="checkbox"/> Mani. Absolute Pressure	35	kPa	36	35	35

SMU-00590



2. Display the desktop and double-click the SSMIII icon.

On the Main Menu that appears on the display, select [Saved Data Display] and then press the Enter key or left-click with the mouse.



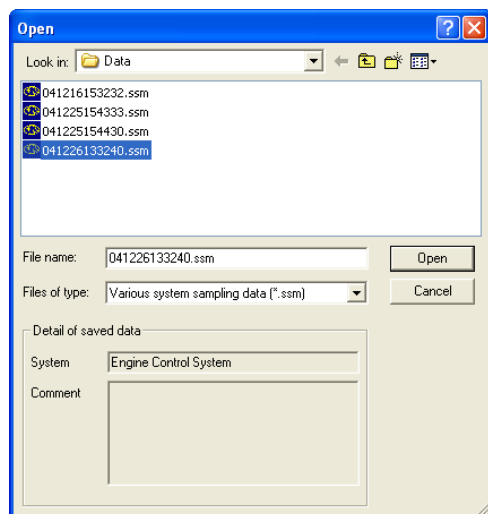
SMU-00890

#### NOTE:

When multiple saved data are displayed, only a part of the items of the "Main Menu" is displayed. Accordingly, other items cannot be selected. For use of the other functions, leave one of the saved data and close all others. All items of the Main Menu can be selected when only one saved data is displayed.

3. The dialog box with a list of saved data files is displayed.

After selecting "Files of type", designate the file you need, and press the Enter key or click the [Open] button.



SMU-00891

4. The targeted file is displayed. For additional display of other saved data, return to step 2 and select the saved data.

#### NOTE:

To open saved data of alliance vehicle, after selecting the [Alliance Vehicle Inspection] on the Main Menu, designate the vehicle you need, and then select the [Saved Data Display].

#### Display from the icon on the Data list toolbar


1. Display one of the targeted saved data.

For the display method, refer to the procedure in the section "Saved Data Display".

The image shows a screenshot of the Data List toolbar. It includes a menu bar (File, View, Tool, Help) and a toolbar with various icons. Below the toolbar is a table of saved data.

Item	Value	Unit	Maximum	Minimum	Average
<input checked="" type="checkbox"/> Coolant Temp.	89	°C	89	89	89
<input checked="" type="checkbox"/> A/F Correction #1	-0.8	%	-0.8	-0.8	-0.8
<input checked="" type="checkbox"/> A/F Learning #1	-7.0	%	-7.0	-7.0	-7.0
<input checked="" type="checkbox"/> Mani. Absolute Pressure	35	kPa	36	35	35

SMU-00590

2. Click the  icon on the Data List Toolbar.  
Select the desired file from the list of files that appears on the display.

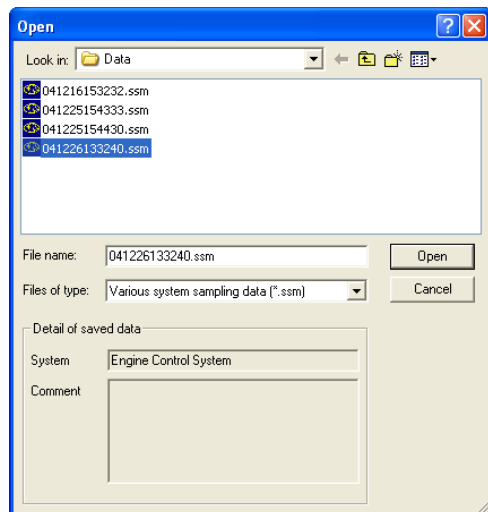


SMU-00591



3. The dialog box with a list of saved data files is displayed.

After selecting "Files of type", designate the file you need, and press the Enter key or click the [Open] button.



SMU-00891

4. The targeted file is displayed. For additional display of other saved data, return to step 2 and select the saved data.

#### NOTE:

- Saved data multiple display can also be done by double-clicking the saved file of sampling data. By double-clicking multiple files after opening the folder in which the saved files are saved, the multiple saved data analysis screens are displayed. However, that if you start up the PC application this way, you will not be able to change to the sampling screen. If you want to sample data, start up the PC application using the procedure under "Starting Up the System".
- Multiple display is possible for the following types of files.

- .adt: This extension is used for a file that contains data saved by all systems diagnosis.
- .ssm: This extension is used for a file that contains data saved from the Digital Data Screen or Graph Screen.
- .obd: This extension is used for a file that contains data saved by OBD system failure diagnosis.
- .sdr: This extension is used for a file that contains data saved by driving recorder.

- .biu: This extension is used for a file that contains data saved a body integrated unit customizing list.
- .ocl: This extension is used for a file that contains data saved by analog sampling.
- .cym: This extension is used for a file that contains data saved by High-Grade Roughness Monitor.

- Multiple display of saved data with the same name is not possible.
- When SSMIII is started again after a .cym file has been opened and the display language is switched, the language for the .cym file will not switch.
- When SSMIII is started again after a .biu file has been opened and the display language is switched, the language of the .biu file will not be switched only for the inspection result.
- When the file name of a window minimized to the taskbar is confirmed, the file name is displayed at the beginning, but in case of a .cym file, the file name is displayed at the end.

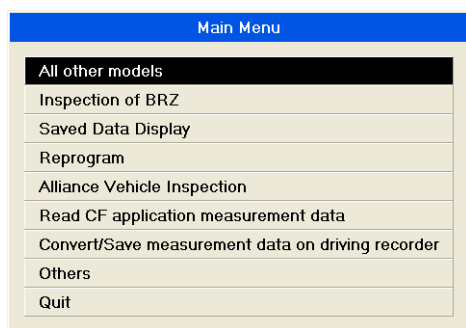


## Diagnostic Codes Display

Use the following procedure to check the diagnostic codes memorized by the control module, and cancel codes.

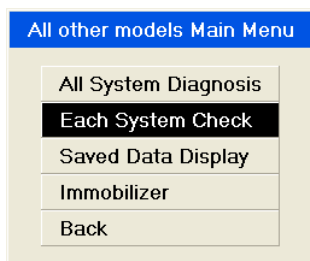
### Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



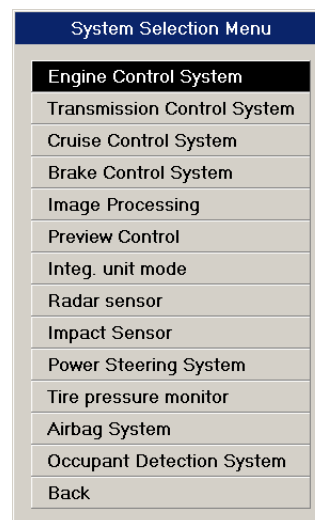
SMU-01294

3. Select [Each System Check] at the item selection screen.



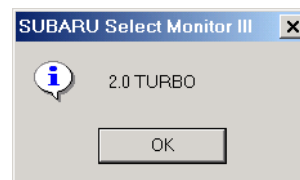
SMU-01296

4. On the System Selection Menu, select the desired system and then press the Enter key or left-click with the mouse. (As an example, "Engine Control System" is selected.)



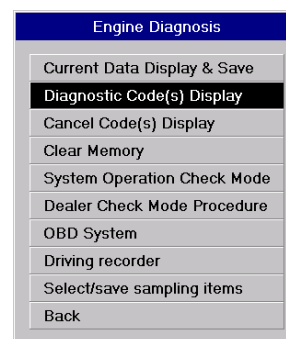
SMU-00665

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00128

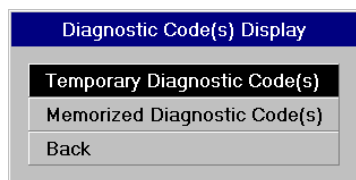
6. From the list of fault diagnosis items, select [Diagnostic Code(s) Display] and then press the Enter key or left-click with the mouse.



SMU-00734



7. Select the desired item and then press the Enter key or left-click with the mouse.



SMU-00543

8. This causes the Diagnostic Code Screen to appear.

Code	Description & trouble position
Number of Diagnostic Code(s): 2	
P0102	Mass or Volume Air Flow Circuit Low
P0113	Intake Air Temperature Sensor Circuit Malfunction (High Input)

SMU-00230

#### NOTE:

The contents of the display screen depend on the system being diagnosed, vehicle model and specifications, and system fault diagnosis mode.

#### {Latest Diagnostic Code(s)}

This shows the latest diagnostic codes detected by the control module.

#### {Memorized Diagnostic Code(s)}

This shows diagnostic codes detected in the past that are memorized by the control module, and the latest currently detected diagnostic codes.

#### {D-Check Diagnostic Code(s)}

This shows the results of fault diagnosis in the dealer check mode.

#### {Temporary Diagnostic Code(s)}

This shows temporary codes detected by the OBD system.

#### {Current Diagnostic Code(s)}

This shows diagnostic codes currently detected by the control module.

#### {History Diagnostic Code(s)}

This shows diagnostic codes detected in the past that are memorized by the control module, and the latest currently detected diagnostic codes.

#### {Readiness Code}

Shows a state of self-diagnosis to the diagnosis codes in the control unit.

Code indicating that the self-diagnosis is not yet carried out is displayed, and Diagnosis code for the control unit self-diagnosis has not been completed will be displayed.

Self-diagnosis is completed successfully, it will not be displayed.

#### IMPORTANT:

Self-diagnosis is performed for each ignition switch ON.

Self-diagnosis is completed successfully, it will not display the readiness code.

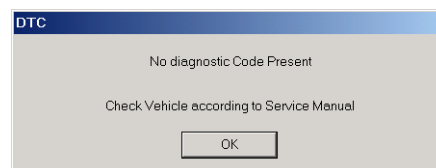
However, there are some cases where the readiness code reappears then the ignition switch OFF → ON.

#### NOTE:

- Inspection methods that utilize the readiness code  
In order to confirm whether the repair has been completed definitely, you take advantage of the readiness code.  
Execute a memory clear after repair.  
After you run the "drive cycle", or carry out inspection mode of the control unit, check the readiness code.  
If the diagnosis code is not displayed, self-diagnosis is completed.  
Perform checks to "temporary code" or "failure" current thereafter.  
If the diagnosis code is not displayed, the repair is complete.
- Executing memory clear deletes all diagnostic codes that are currently memorized by the control module.

#### When no diagnostic codes are displayed

The message shown below appears if there are no diagnostic codes currently memorized by the control module.

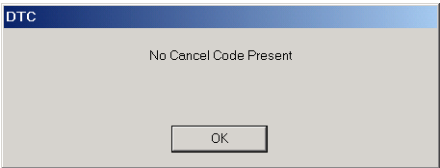


SMU-00228



In accordance with the instructions provided, click the [OK] button.

The message shown below appears if there are no cancel codes currently memorized by the control module when cruise control system cancel codes are checked.



SMU-00229

**NOTE:**

In the case of a vehicle that is demonstrating a fault that cannot be detected by diagnostic codes, perform repair work in accordance with the fault diagnostic procedures in the Service Manual.

**When diagnostic codes are displayed**

A screen showing the diagnostic codes and any message text related to the source of the fault appears if there are diagnostic codes memorized by the control module.

File View Tool Help	
F2Clear F8Print F12Exit	
Code	Description & trouble position
Number of Diagnostic Code(s): 2	
P0102	Mass or Volume Air Flow Circuit Low
P0113	Intake Air Temperature Sensor Circuit Malfunction (High Input)

SMU-00230

**Executing Memory Clear**

Click the [F2]Clear button on the Function Key Bar or the F2 function key on the PC keyboard.

**Printing the Diagnostic Code Screen**

Click the [F8]Print button on the Function Key Bar or the F8 function key on the PC keyboard.

**Returning to the Fault Diagnosis Menu Screen**

Click the [F12]Exit button on the Function Key Bar or the F12 function key on the PC keyboard.



## Manual Link (Excluding North America)

\* This function is not supported in North America.

Manual Link is the fusion of SSMIII and Service Manual on a PC. Until now it was necessary to search the Service Manual for each model and then to search the corresponding page. However, when a Hybrid-version Service Manual compatible with Manual Link is installed on a PC where SSMIII is installed, the corresponding diagnosis page of the Service Manual can be found by simple operation from the DTC detected by “Diagnostic Code(s) Display” of SSMIII. Manual Link makes it possible to aim for better efficiency by reducing the time required to search for the corresponding manual.

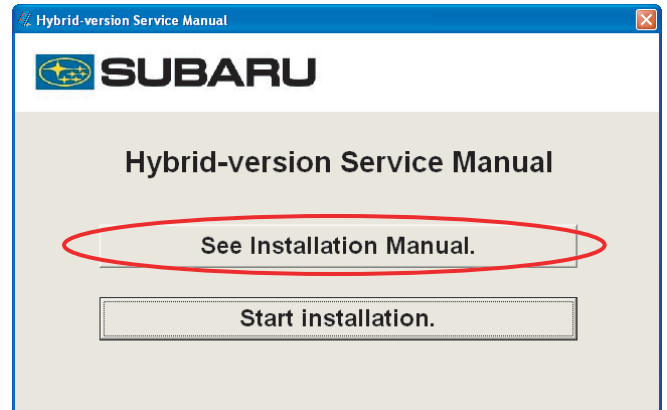
### NOTE:

- This function may not be available in the case of certain vehicle models.
- The Manual Link function can be used for “All System Diagnosis” and for “Diagnostic Code(s) Display” for each system.
- The following software is required to use the Manual Link function and should be installed in advance.

Internet Explorer 5.5 or higher (6.0 or higher recommended)

Adobe Acrobat Reader 4.0 or higher

- Please install the Service Manual for each model to be diagnosed in advance for use of the Manual Link function. For the installation method, refer to the Installation Manual by clicking “See Installation Manual” in the menu displayed at the time of installation of the Hybrid-version Service Manual. At the time of installation, install the SSMIII PC application first and then the Service Manual. When the SSMIII PC application has not been installed, the Service Manual cannot be installed.



SMU-00889

1. Display the DTC check result screen. (Checking of engine DTC is showed as an example here.)

Code	Description & trouble position
Number of Diagnostic Code(s): 19	
<input type="checkbox"/> P0102	Mass or Volume Air Flow Circuit Low
<input type="checkbox"/> P0123	Throttle Position Sensor A High Input
<input type="checkbox"/> P0328	Knock Sensor 1 Circuit Malfunction (High Input)
<input type="checkbox"/> P0118	Engine Coolant Temp. Sensor Circuit High Input
<input type="checkbox"/> P0183	Fuel Temperature Sensor A Circuit High Input
<input type="checkbox"/> P0113	Intake Air Temperature Sensor Circuit Malfunction (High Input)
<input type="checkbox"/> P0108	Manifold Pressure Sensor Circuit Malfunction (High Input)
<input type="checkbox"/> P1572	IMM Circuit Failure (Except Antenna Circuit)
<input type="checkbox"/> P0223	Throttle Position Sensor B High Input
<input type="checkbox"/> P2122	Accelerator Position Sensor D Low Input
<input type="checkbox"/> P2127	Accelerator Position Sensor E Low Input
<input type="checkbox"/> P2011	Tumble Generated Valve Signal 2 Circuit Malfunction (Open)
<input type="checkbox"/> P2008	Tumble Generated Valve Signal 1 Circuit Malfunction (Open)
<input type="checkbox"/> P2021	Tumble Generated Valve Position Sensor 2 Circuit Low
<input type="checkbox"/> P2016	Tumble Generated Valve Position Sensor 1 Circuit Low
<input type="checkbox"/> P0418	Sec. Air Pump Relay (Low)
<input type="checkbox"/> P0413	Sec. Air Combi Valve Relay Circuit 1 (Low)
<input type="checkbox"/> P2433	Sec. Air Pressure Sensor (High)
<input type="checkbox"/> P0416	Sec. Air Combi Valve Relay Circuit 2 (Low)

SMU-00881

### NOTE:

Refer to the corresponding item for the “Diagnostic Code(s) Display” procedure.

2. Enter a check mark into the checkbox for the DTC to be viewed in the Service Manual.

Code	Description & trouble position
Number of Diagnostic Code(s): 19	
<input type="checkbox"/> P0102	Mass or Volume Air Flow Circuit Low
<input checked="" type="checkbox"/> P0123	Throttle Position Sensor A High Input
<input type="checkbox"/> P0328	Knock Sensor 1 Circuit Malfunction (High Input)
<input type="checkbox"/> P0118	Engine Coolant Temp. Sensor Circuit High Input
<input type="checkbox"/> P0183	Fuel Temperature Sensor A Circuit High Input

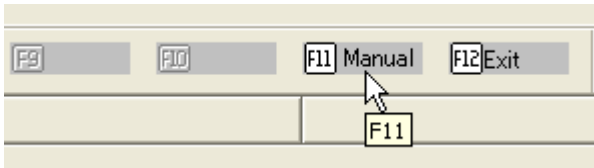
SMU-00882



**NOTE:**

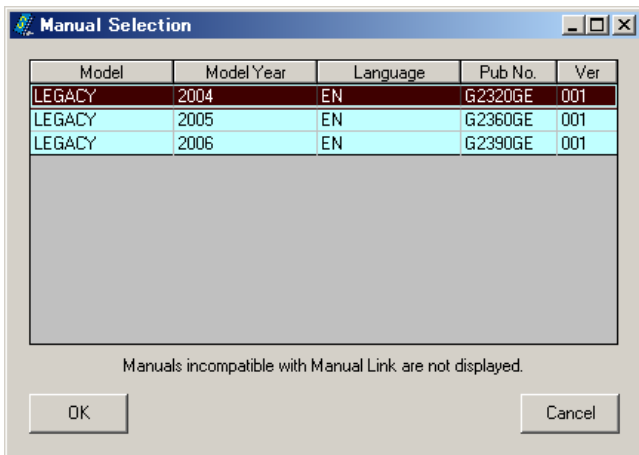
A check mark can be entered only for one DTC.

- Click the **F11 Manual** button on the Function Key Bar, or press the F11 function key on the PC keyboard.



SMU-00883


- The Manual Selection screen is displayed. Select the desired manual and click the **[OK]** button.

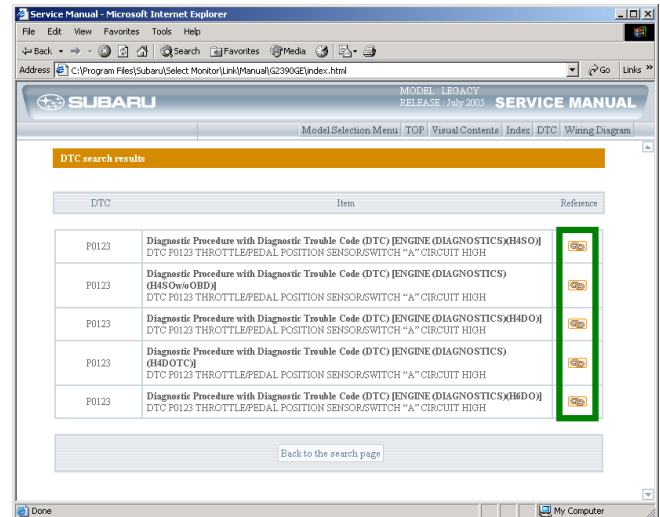


SMU-00884

**NOTE:**

The Service Manual selected here is applied until return is made to the “System Selection Menu” screen. When view to a different Service Manual is desired, return once to the “System Selection Menu” and restart SSMIII.

- The DTC search result screen for the Service Manual is displayed. Click the reference  button for the desired model.

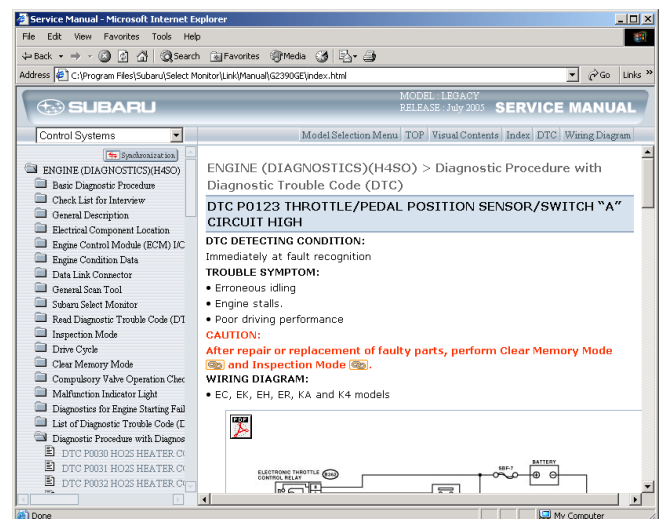


SMU-00885

**NOTE:**

This screen is not displayed when the search result shows only one model.

- The fault diagnosis screen for the Service Manual is displayed. For the operation procedure from this point on, refer to the “Service Manual Guide”.



SMU-00886

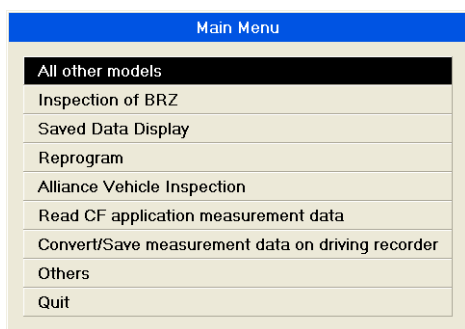


## Freeze Frame Data

\* This function is not supported by a vehicle model and specifications.

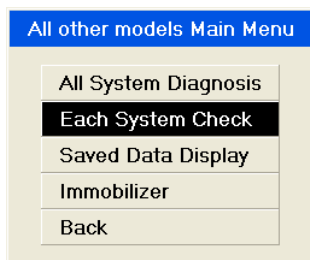
When the control unit of the each system detects a diagnosis code, record the operation of the driver and control state of the unit and the input data to the control unit. Guess the vehicle state from this data, which can be used for fault diagnosis.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



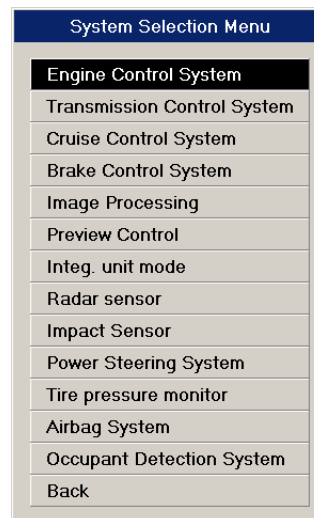
SMU-01294

3. Select [Each System Check] at the item selection screen.



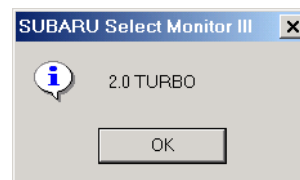
SMU-01296

4. On the System Selection Menu, select the desired system. (As an example, "Engine Control System" is selected.)



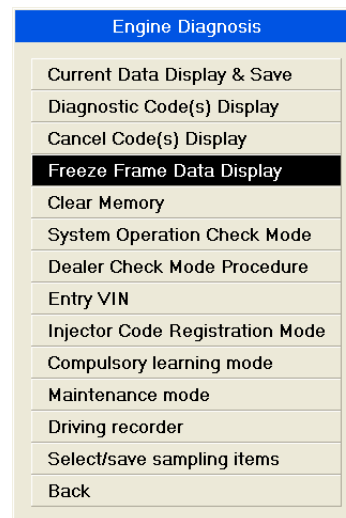
SMU-00665

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00128

6. From the list of fault diagnosis items, select [Freeze Frame Data Display].



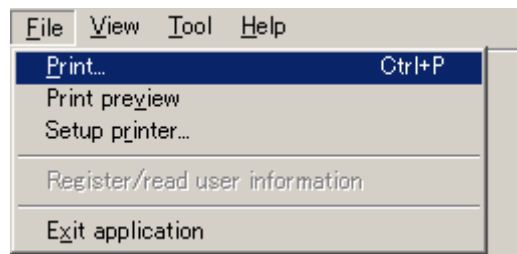
SMU-01481



7. This displays Freeze Frame Data information as shown below. Choose the type of fault detection at the time by the selection box of the display screen top. It is possible that the data of the diagnosis code detection, and displays the time-series data including the before and after data.


Item	Detect	Detect	Detect	Detect	Unit
time(ms)	-530	-270	0	---	---
Calculated load value	0.0	0.0	0.0	---	%
Coolant Temp.	-40	-40	-40	---	°C
Mani. Absolute Pressure	59	119	159	---	kPa
Engine Speed	0	0	0	---	rpm
Vehicle Speed	0	0	0	---	km/h
Intake Air Temp.	-40	-40	-40	---	°C
Mass Air Flow	0.42	0.42	0.42	---	g/s
Throttle Opening Angle	0	0	0	---	%
Time Since Engine Start	0	0	0	---	sec
Common rail pressure	246030	249690	249690	---	kPa
Number of warm-ups	3	3	3	---	---
Meter since DTC cleared	111	111	111	---	km
Atmosphere Pressure	100	100	100	---	kPa
Catalyst Temperature #11	0	0	0	---	°C
Catalyst temperature #12	0	0	0	---	°C
Control module voltage	11.510	11.510	11.510	---	V
Ambient Temperature	-40	-40	-40	---	°C
Accelerator Pedal Pos.#1	0.0	0.0	0.0	---	%

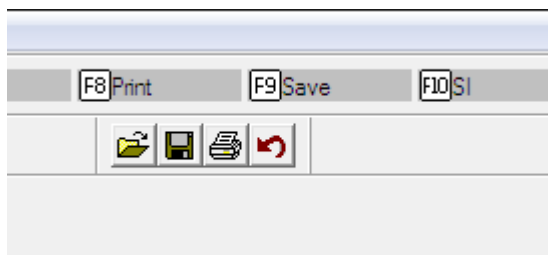
SMU-01482



SMU-01569


## Saving data

If a sampling operation is being performed, stop it. Click the  icon on the Data List Toolbar, or the **[F9] Save** button on the Function Key bar.



SMU-01568

## Printing Data

If a sampling operation is being performed, stop it. Click the [File] menu and then select [Print]. You can also print by clicking the  icon on the Data List Toolbar, by clicking the **[F8] Print** button on the Function Key Bar.

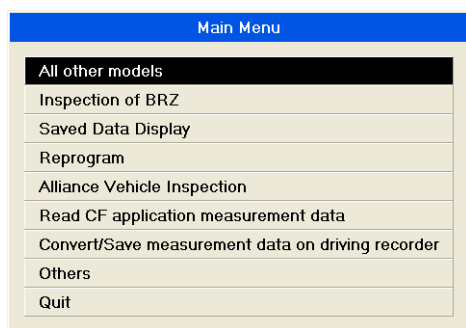


## Clearing Memory

Use the following procedure to delete the diagnostic codes memorized by the control modules of each system after correcting the fault.

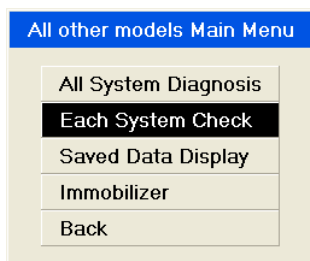
### Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



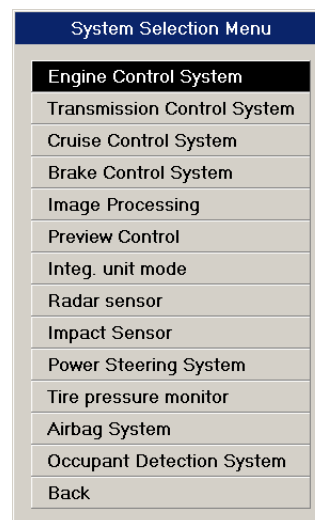
SMU-01294

3. Select [Each System Check] at the item selection screen.



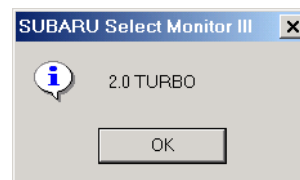
SMU-01296

4. On the System Selection Menu, select the desired system and then press the Enter key or left-click with the mouse. (As an example, "Engine Control System" is selected.)



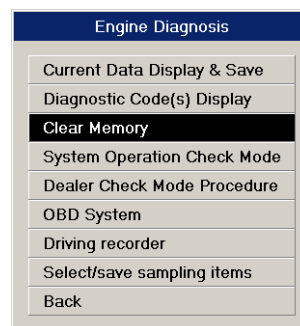
SMU-00665

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00128

6. From the list of fault diagnosis, select [Clear Memory] and then press the Enter key or left-click with the mouse.

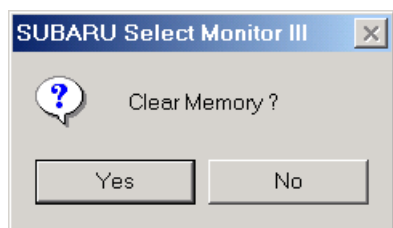


SMU-00603



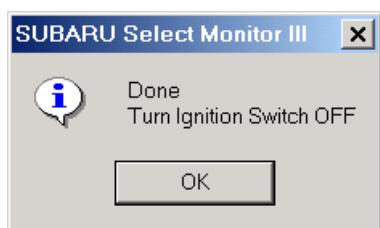
7. This causes a memory clear confirmation message to appear.

Use the mouse to click the [Yes] button.



SMU-00239

Executing the memory clear operation causes the message shown below to appear. In accordance with the instructions of the message, turn off the vehicle's ignition switch and then use the mouse button to click [OK].



SMU-00240

#### NOTE:

Also, there are some systems that do not have a memory clear item on the fault diagnosis screen. With such a system, the dialog box will disappear from the display when you turn off the vehicle's ignition switch.

## Transmission System Memory Clear 2

On the fault diagnosis screen for the transmission system, [Clear Memory] and [Clear Memory 2] items may be displayed.

Selecting the [Clear Memory 2] item deletes diagnostic codes and learning control values memorized by the transmission control module.

## Airbag System Memory Clear

To execute the memory clear operation in the airbag system, you must first completely service all problems. If there is even one problem remaining, the memory clear operation cannot be executed.

And if the memory clear operation is executed when

no DTCs are stored, the message shown below may appear. In such a case, click the [No], and then select the [Diagnostic Code(s) Display] to check the status of DTC. If DTCs are not sorted, the memory clear operation is not necessary.



SMU-01293



## System Operation Check Mode

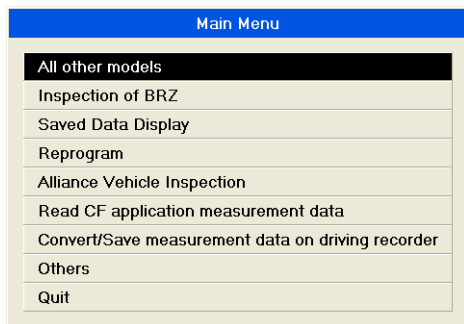
Use the following procedure to force operation of engine control system actuators to check their operation.

### NOTE:

This function is not supported in some vehicle models.

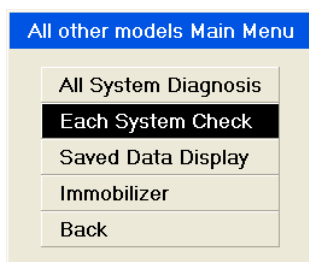
### Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



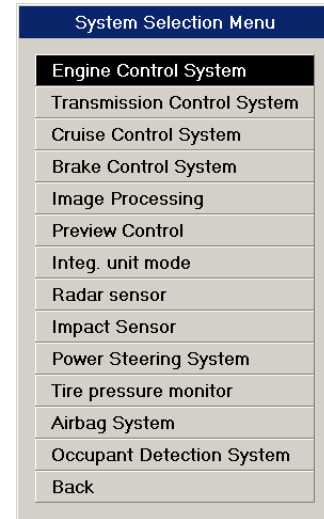
SMU-01294

3. Select [Each System Check] at the item selection screen.



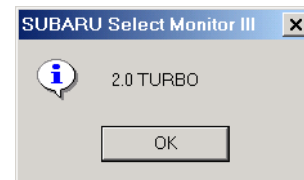
SMU-01296

4. On the System Selection Menu, select [Engine Control System] and then press the Enter key or left-click with the mouse.



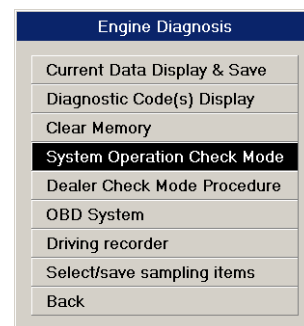
SMU-00665

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00128

6. From the list of fault diagnosis, select [System Operation Check Mode] and then press the Enter key or left-click with the mouse.

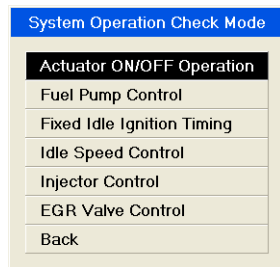


SMU-00604



7. This displays a system operation check mode menu screen.

Select the desired item and then press the Enter key or left-click with the mouse.



SMU-00877

#### IMPORTANT:

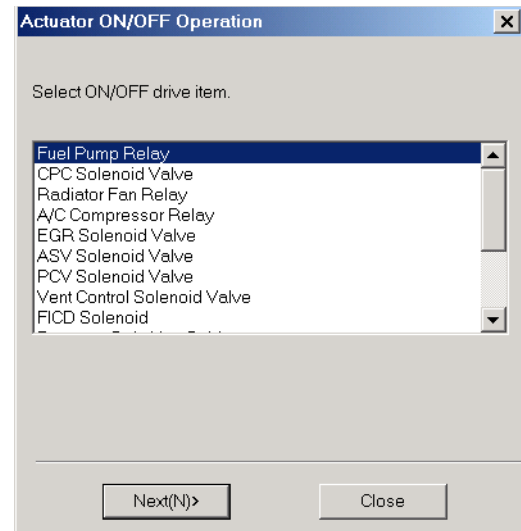
In System Operation Check Mode, if you work on this in the mode with the engine started, it must only be done when the engine is idling. It is very dangerous if you work on this mode while the vehicle is running, because the engine may stall or the brakes may lose some of the braking force depending on the settings.

#### NOTE:

The display items that appear depend on the model and specifications of the vehicle on which fault diagnosis is being performed.

## Actuator ON/OFF Operation

This function is used to perform test operation of various actuators related to the engine control system. The delivery mode fuse (test mode connector) needs to be connected in order to perform the test. Selecting actuator ON/OFF operation on the system operation check mode screen causes the screen shown below to appear. Select the desired item and then click the **Next(N)>** button to force operation of the actuators for testing.



SMU-00248

#### NOTE:

- Do not use the fuse which equipped on vehicle.
- Make sure the vehicle's ignition switch is off before connecting or disconnecting the delivery mode fuse (test mode connector).

## Fuel Pump Control

This function has 2 modes: the fuel pump "OFF Drive" mode and the fuel pump "ON/OFF Drive" mode.

#### NOTE:

- The delivery mode fuse (test mode connector) does not need to be connected to operate this function.
- Always execute "Clear Memory" after operating this function.

## OFF Drive

Use this function to turn the fuel pump OFF and remove the residual pressure in the fuel pipe. Follow the on-screen instructions to execute this procedure.

#### IMPORTANT:

This mode should be executed at the time of idling. When the accelerator pedal has been depressed etc., so that the engine is not in idling condition, this mode is stopped and the fuel pump becomes ON.



## ON/OFF Drive

Use this function to turn the fuel pump ON/OFF and remove the fuel in the fuel tank.

Follow the on-screen instructions to execute this procedure.

### IMPORTANT:

Do not operate the fuel pump if there is no fuel in the fuel tank; otherwise, the fuel pump may be damaged.

## Fixed Idle Ignition Timing

This function fixes the ignition timing during idling, and by stopping the “idle ignition timing correction”, it allows you to check the basic idle ignition timing and whether the idle ignition timing control is operating properly. Follow the on-screen instructions to execute this procedure.

### NOTE:

- The delivery mode fuse (test mode connector) does not need to be connected to operate this function.
- The ignition timing fixed value varies depending on the vehicle model. Also, the fixed value cannot be changed.
- The engine speed may vary while this mode is operated.
- Always execute “Clear Memory” after operating this function.

## Idle Speed Control

This function allows you to set the idle speed you want.

Follow the on-screen instructions to execute this procedure.

### NOTE:

- The delivery mode fuse (test mode connector) does not need to be connected to operate this function.
- Depending on conditions such as vehicle model and elevation, the actual idle speed may not go up when the idle speed setting is raised.
- Always execute “Clear Memory” after operating this function.

## Injector Control

This function has two modes: “Injection Stop Mode” and “Injection Quantity Control” mode.

### NOTE:

- The delivery mode fuse (test mode connector) does not need to be connected to operate this function.
- Always execute “Clear Memory” after operating this function.

## Injection Stop Mode

This function allows you to stop any cylinder injector when identifying which cylinder is malfunctioning.

Follow the on-screen instructions to execute this procedure.

## Injection Quantity Control

The injection quantity can be increased according to the set percentage. This function can be used in cases such as when the engine is not running properly and you need to check whether the problem is a lean air-fuel ratio.

Follow the on-screen instructions to execute this procedure.

### IMPORTANT:

- Keep in mind that increasing the injection quantity may cause fuel to stick to the spark plugs, resulting in engine malfunction.
- Avoid running the engine for a long period of time with the injection quantity increased, or else the emissions will deteriorate.

## EGR Valve Control

This function allows you to operate the EGR valve in a preset number of steps and control the EGR rate to a desired value. It is a means of checking whether or not the EGR valve is working properly.

Follow the on-screen instructions to execute this procedure.

### NOTE:

- The delivery mode fuse (test mode connector) does not need to be connected to operate this function.
- The number of steps that can be set varies depending on the vehicle models.
- Always execute “Clear Memory” after operating this function.



## Sub Fuel Pump Control

\* This function is supported only in Diesel models.

This function allows you to operate the sub fuel pump relay. It is a means of checking whether the sub pump supplied with power properly.

Follow the on-screen instructions to execute this procedure.

### IMPORTANT:

Do not operate the sub fuel pump if there is no fuel in the fuel tank; otherwise, the sub fuel pump may be damaged.

### NOTE:

- Depends on vehicle model, it may need to connect the delivery mode fuse (test mode connector) to operate this function.
- Do not use the fuse which equipped on vehicle.
- Always execute "Clear Memory" after operating this function.

## Wastegate Valve Control

\* This function is supported only in Diesel models.

This function allows you to operate the wastegate valve in a preset number of steps and control the boost pressure to a desired value. It is a means of checking whether or not the wastegate valve is working properly.

Follow the on-screen instructions to execute this procedure.

### NOTE:

- The delivery mode fuse (test mode connector) does not need to be connected to operate this function.
- Always execute "Clear Memory" after operating this function.

## High Pressure Fuel Inspection

\* This function is supported only in Diesel models.

This function allows you to add fuel pressure in common rail until preset common rail target fuel pressure. It is a means of checking whether there is a malfunction or not in fuel system.

Follow the on-screen instructions to execute this procedure.

### NOTE:

- The delivery mode fuse (test mode connector) does not need to be connected to operate this function.
- Always execute "Clear Memory" after operating this function.

## Alternator Control

This function allows you to operate alternator with setup generation mode. It is a means of checking whether there is a malfunction or not at alternator or battery.

Follow the on-screen instructions to execute this procedure.

### NOTE:

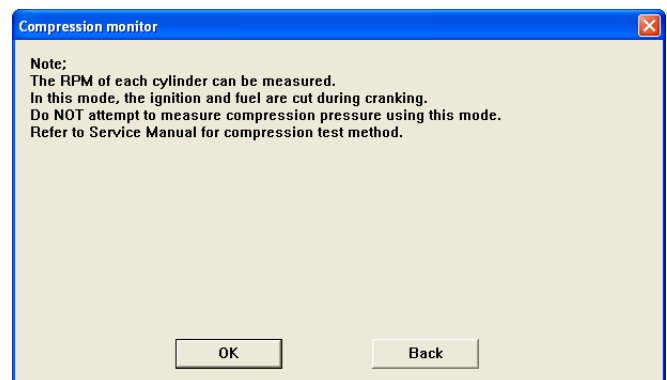
- The delivery mode fuse (test mode connector) does not need to be connected to operate this function.
- Always execute "Clear Memory" after operating this function.

## Compression monitor

You can measure each cylinder rotational speed in cranking.

### Start of measurement

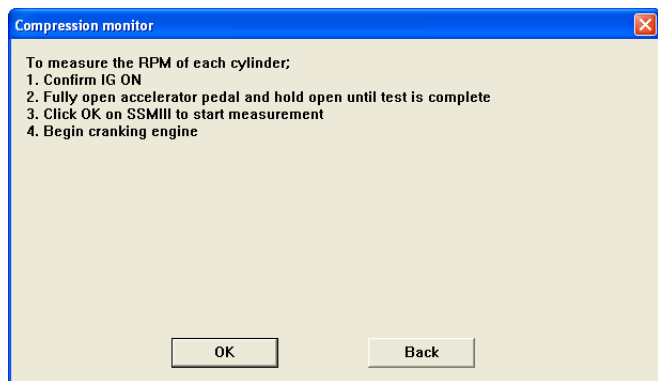
1. You confirm mention contents and click [OK].



SMU-01544

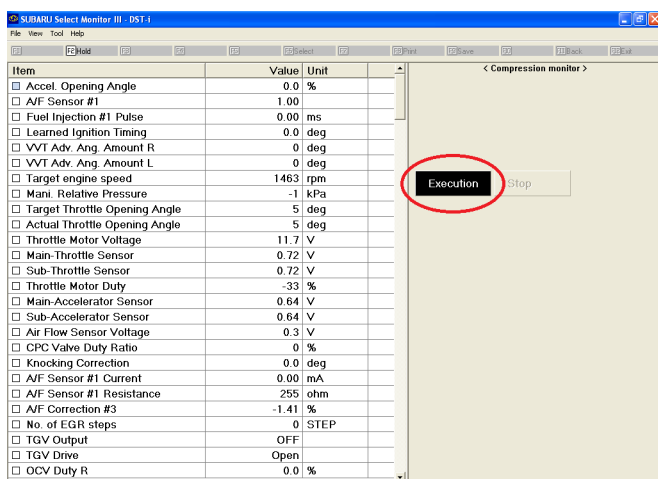


2. You confirm mention contents and click [OK].



SMU-01545

3. Click the [Execution] button.



SMU-01546

#### NOTE:

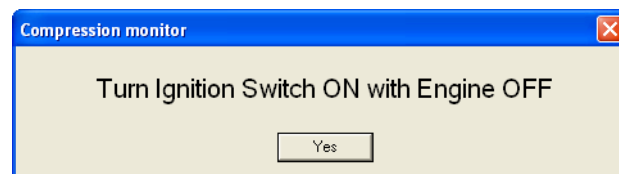
When you click the [Execution] button, please set to fully open the accelerator pedal with ignition switch ON (engine stopped).

4. Measurement starts, please start cranking.

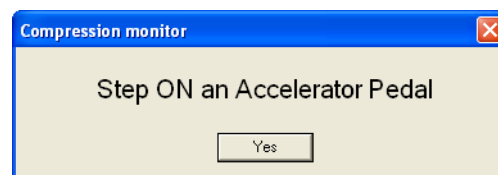
#### NOTE:

If the following screen appears, click the [YES] button to return to the menu screen.

In accordance with the operation instructions on the screen, please measure again.

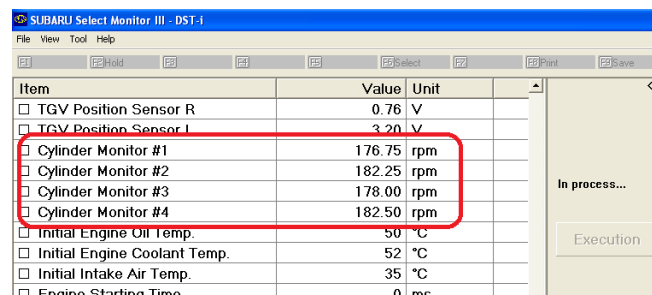


SMU-01547



SMU-01548

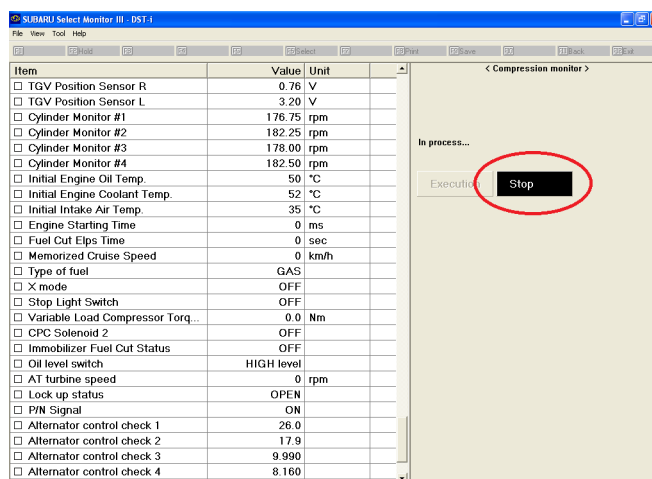
5. Each cylinder rotational speed of cranking will be displayed.



SMU-01549

## Quitting of measurement

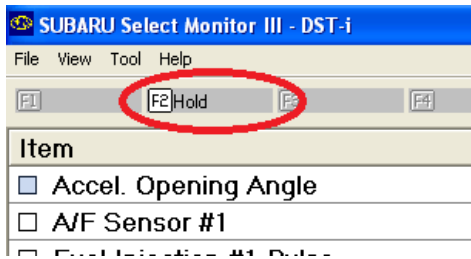
1. Screen measuring progress, and then click the [Stop] button.



SMU-01550

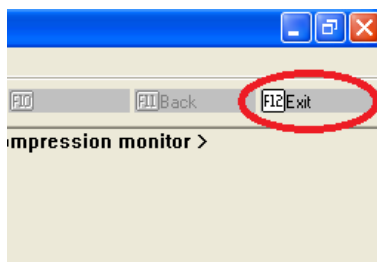


2. Click the **F2Hold** button on the Function Key Bar or press function key F2 of the PC.



SMU-01551

3. Click the **F12Exit** button on the Function Key Bar or press function key F12 of the PC.



SMU-01552

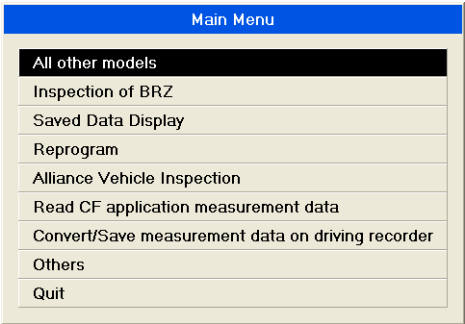


# Simultaneous System Measurement

The function allows you to simultaneously measure data of input, output and/or controlling in the control modules of the systems, which the SSMIII supports.

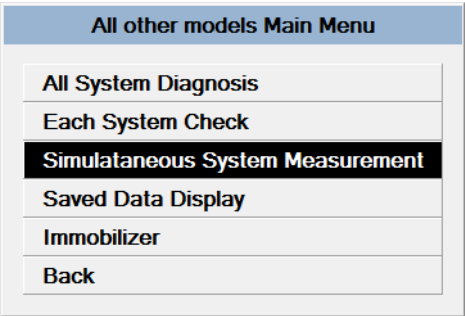
**NOTE:**  
The systems, on which simultaneous measurement is available, are limited to those using CAN communication.

- 1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
- 2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



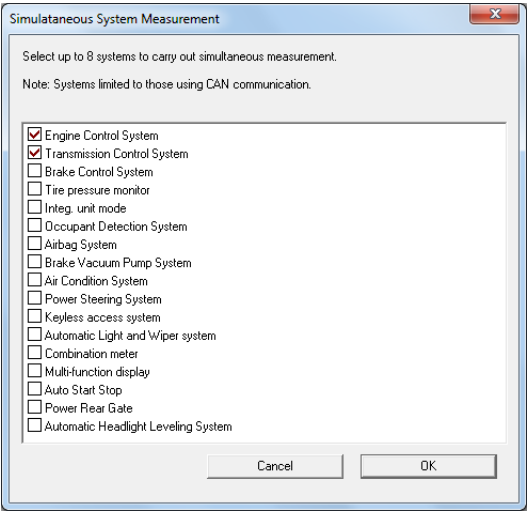
SMU-01294

- 3. Select [Simultaneous System Measurement] at the item selection screen.



SMU-01318

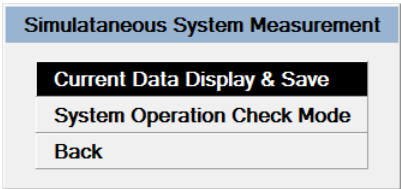
- 4. The system selection screen is displayed. Choose the systems, which require simultaneous data measurement, and press [OK].



SMU-01319

**NOTE:**  
System that can be selected, up to a maximum 3 systems.

- 5. Select the operation items. (As an example, "Current Data Display and Save" is selected.)



SMU-01320

- 6. As to the work procedure after this, refer to the section of [Current Data Display and Save] or [System Operation Check Mode].

**NOTE:**  
To refine the systems shown on the digital-data display is available by selecting a system from the drop-down selection box on the upper left of the screen.



## Dealer Check Mode Procedure

This function can be used to perform inspection of a simplified dealer check by performing operations as prompted by messages that appear on the PC display.

The Dealer check mode procedure is one of the self-diagnostic functions of the control module. The dealer check mode provides the means to perform more thorough system fault diagnosis.

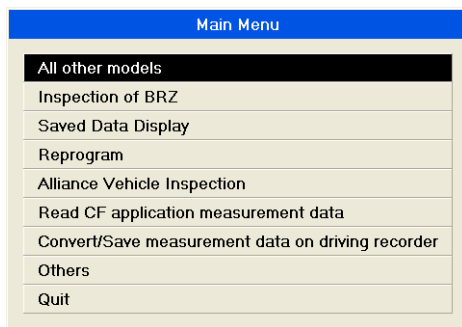
### Getting Ready

1. Connect the Diagnosis System according to the section "Starting Up the System".
2. Connect the test connector. (Make sure that the vehicle's ignition switch is OFF.)

#### NOTE:

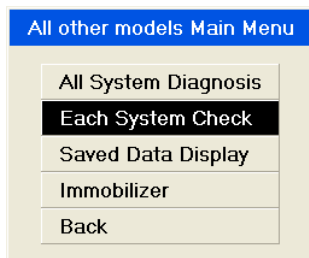
Do not use the fuse which equipped on vehicle.

3. Turn on the vehicle's ignition switch.
4. Double-click the SSMIII icon on the PC screen to start up the application.
5. Select [All other models] at the displayed main menu.



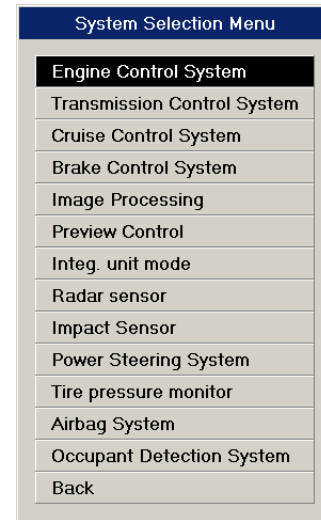
SMU-01294

6. Select [Each System Check] at the item selection screen.



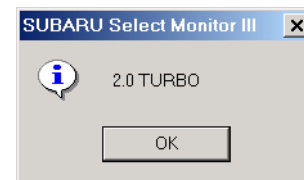
SMU-01296

7. Select [Engine Control System] at the System Selection menu.



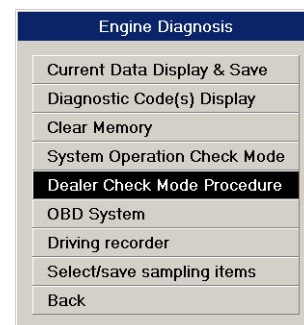
SMU-00665

8. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00128

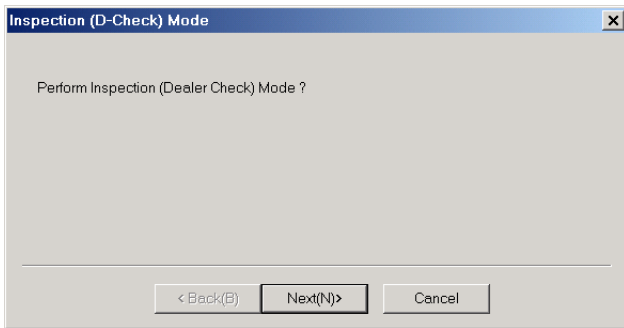
9. From the list of fault diagnosis item, select [Dealer Check Mode Procedure] and then press the Enter key or left-click with the mouse.



SMU-00605



This displays an operation confirmation message. As instructed by the message, click the **Next(N)>** button.



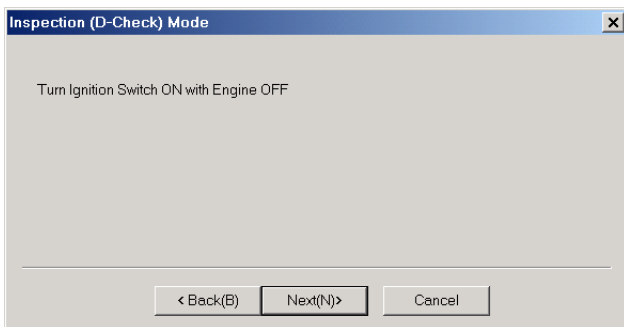
SMU-00255

This displays the Dealer check mode operation instruction screen. Perform Dealer check mode operations in accordance with the instructions that appear.

#### NOTE:

- The delivery mode fuse (test mode connector) must be connected in order to perform the Dealer check mode.
- Do not use the fuse which equipped on vehicle.
- Make sure the vehicle's ignition switch is off before connecting or disconnecting the delivery mode fuse (test mode connector).
- When performing the Dealer check mode while the vehicle is in operation, never allow the driver to operate the SSMIII or SDI.

## Entering the Dealer Check Mode



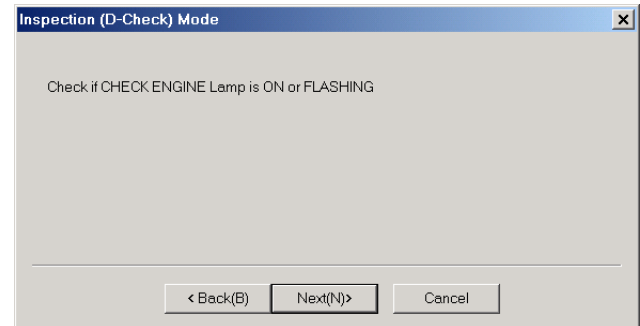
SMU-00256

As instructed by the display message, turn on the vehicle's ignition switch (make sure that the engine is currently not running).

Click **Next(N)>** button to advance to the next screen, or the **< Back(B)** button to return to a previ-

ous screen. To exit the Dealer check mode, click the **Cancel** button.

## Check Engine Lamp Check



SMU-00260

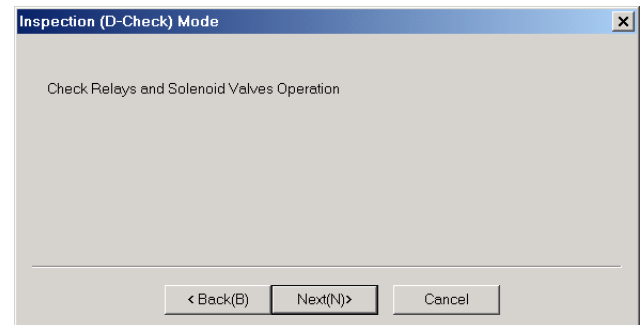
Inspect the check engine lamp to see if it is lit or flashing.

If the check engine lamp is lit or flashing, click the **Next(N)>** button. Click the **< Back(B)** button to return to a previous screen or the **Cancel** button to cancel the Dealer check mode.

#### NOTE:

If the check engine lamp is not lit, perform fault diagnosis on the check engine lamp circuit as detailed in the Service Manual.

## Actuator Operation Check



SMU-00264

This procedure checks for proper operation of the various actuators of the fuel pump, radiator fan, and other engine control system-related components.

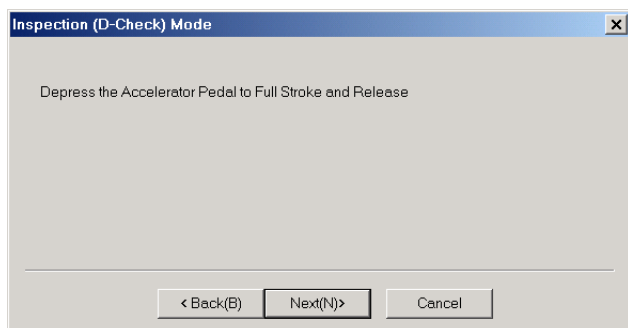


When an actuator is operating normally, click  button to advance to the next screen, or the  button to return to a previous screen. To exit the Dealer check mode, click the  button.

**NOTE:**

If an actuator abnormality is discovered, perform fault diagnosis in accordance with the Service Manual.

## Throttle Valve Position Sensor Input Signal Check

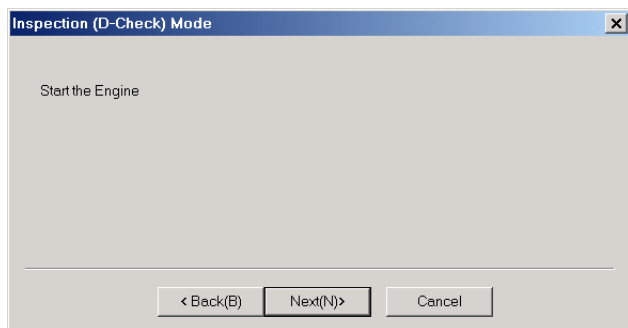


SMU-00268

Slowly press the accelerator pedal down as far as it will go, and then release it.

Click  button to advance to the next screen, or the  button to return to a previous screen. To exit the Dealer check mode, click the  button.

## Engine Start



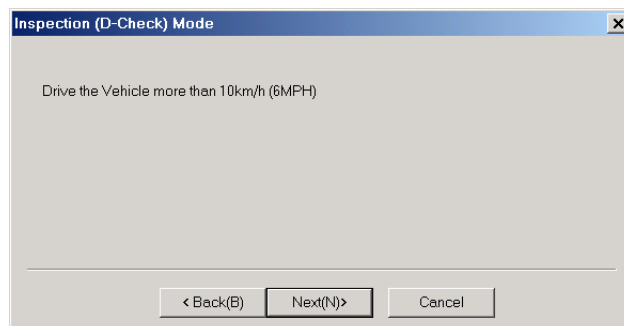
SMU-00272

Start the engine of the vehicle.

Click  button to advance to the next screen, or the  button to return to a previous screen.

ous screen. To exit the Dealer check mode, click the  button.

## Vehicle Speed Signal Check



SMU-00276

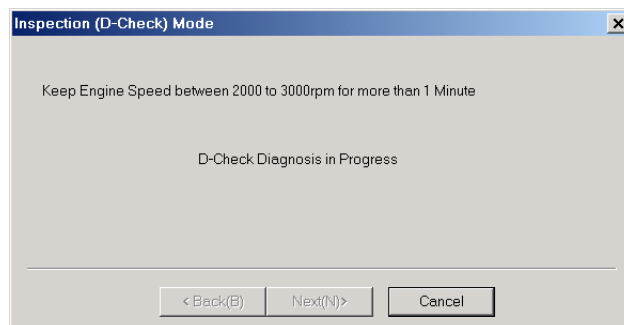
Run the vehicle at a speed of at least 10km/h (6 MPH).

**IMPORTANT:**

When performing the Dealer check mode while the vehicle is in operation, never allow the driver to operate the SSMIII or interface box.

Click  button to advance to the next screen, or the  button to return to a previous screen. To exit the Dealer check mode, click the  button.

## O2 Sensor Check



SMU-00280

Increase engine speed to the range of 2000 to 3000 rpm, and keep it there for at least one minute.

A diagnostic result display will appear after the Dealer check mode is complete.

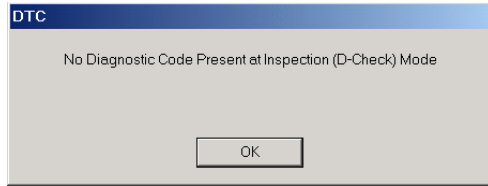
To cancel the Dealer check mode part way through, click the  button.



## When no fault is detected by the Dealer check mode procedure

The dialog box shown below appears when no fault is detected.

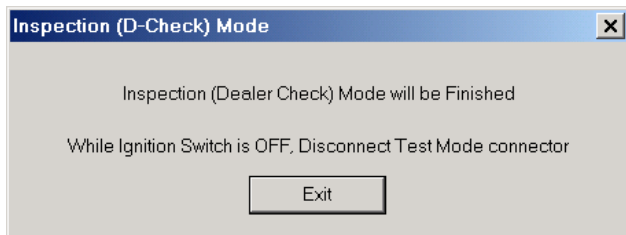
Click the [OK] button.



SMU-00282

This displays dealer check mode ending screen.

Click the [Exit] button to complete the check.



SMU-00283

## When a fault is detected by the Dealer check mode procedure

The applicable diagnostic code appears when a fault is detected.

Check the diagnostic codes, and perform repair work in accordance with Service Manual fault diagnosis procedures.

Code	Description & trouble position
Number of Diag.Code(D-Check): 2	
P0851	Neutral Switch Input Circuit Low
P0502	Vehicle Speed Sensor Low Speed

SMU-00284

### NOTE:

After completing the Dealer check mode procedure, turn off the vehicle's ignition switch and disconnect the delivery mode fuse (test mode connector).



## OBD System

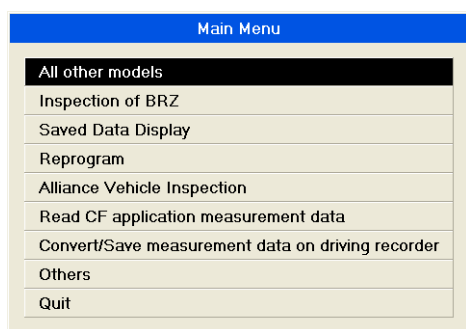
Vehicle fault diagnosis can be performed by checking the OBD system control parameters.

### NOTE:

This function cannot be performed if the vehicle is not equipped with an OBD system.

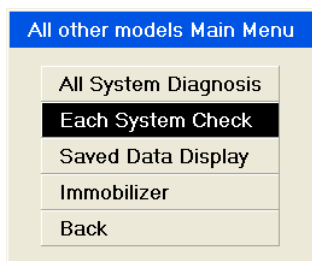
### Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



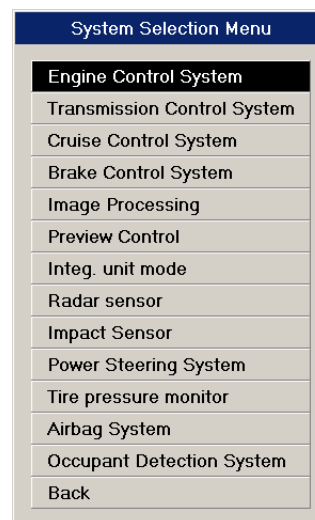
SMU-01294

3. Select [Each System Check] at the item selection screen.



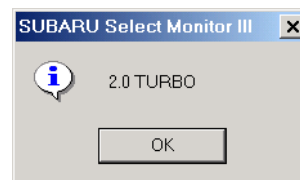
SMU-01296

4. On the System Selection Menu, select the desired system and then press the Enter key or left-click with the mouse. (As an example, "Engine Control System" is selected.)



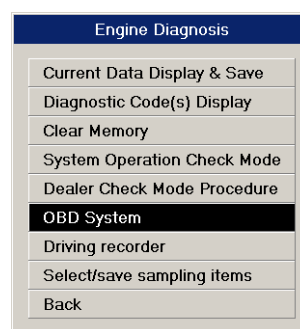
SMU-00665

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00128

6. From the list of fault diagnosis items, select [OBD System] and then press the Enter key or left-click with the mouse.



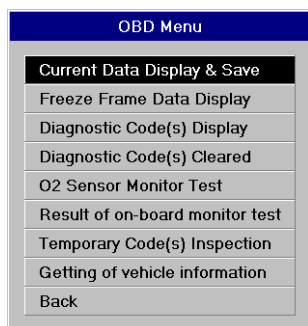
SMU-00606

7. This causes the OBD system menu screen to appear.  
Select the desired item and then click the mouse.



**NOTE:**

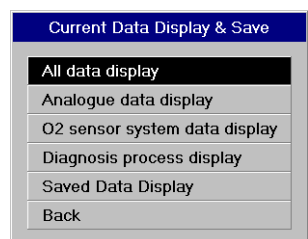
The items that appear depend on the system being diagnosed.



SMU-00545

## Current Data Display & Save

Selecting [Current Data Display & Save] on the OBD menu screen displays the screen shown below.



SMU-00546

The following describes the items that appear on this screen.

### All data display

Use this item to check OBD system diagnostic results, and control module input signals, which are needed for diagnosis.

Item	Value	Unit
<input checked="" type="checkbox"/> Number of Diag. Code	0	
<input type="checkbox"/> MI(MIL)	OFF	
<input type="checkbox"/> Misfire monitoring	complete	
<input type="checkbox"/> Fuel system monitoring	complete	
<input type="checkbox"/> Component monitoring	complete	

SMU-00592

### Analog data display Menu

Use this item to check control module input signals and control module control data.

Item	Value	Unit
<input checked="" type="checkbox"/> Calculated load value	1.2	%
<input type="checkbox"/> Coolant Temp.	90	°C
<input type="checkbox"/> Short term fuel trim B1	0.0	%
<input type="checkbox"/> Long term fuel trim B1	-7.8	%
<input type="checkbox"/> Mani. Absolute Pressure	36	kPa

SMU-00593

### O2 sensor system data display

Use this item to check O2 sensor-related control module input signals and control data.

Item	Value	Unit
<input checked="" type="checkbox"/> Oxygen sensor #12	0.080	V
<input type="checkbox"/> Short term fuel trim #12	-0.8	%
<input type="checkbox"/> A/F Sensor #11	0.996	
<input type="checkbox"/> A/F Sensor #11	3.784	V

SMU-00594

### Diagnosis process display

Use this item to check OBD system diagnostic results.

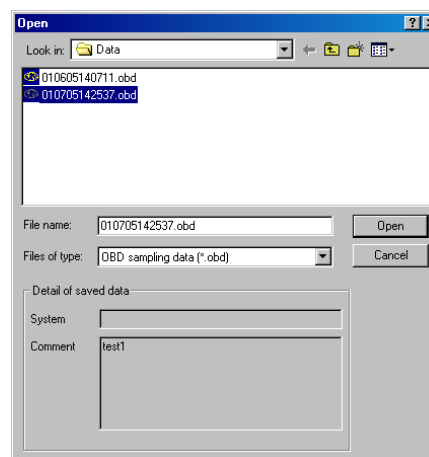
Item	Value	Unit
<input checked="" type="checkbox"/> Number of Diag. Code	0	
<input type="checkbox"/> MI(MIL)	OFF	
<input type="checkbox"/> Misfire monitoring	complete	
<input type="checkbox"/> Fuel system monitoring	complete	

SMU-00595

### Saved Data Display

Use this item to recall and check data saved with the SSMIII OBD system.

On the file type dialog box, select "OBD sampling data (\*.obd)".



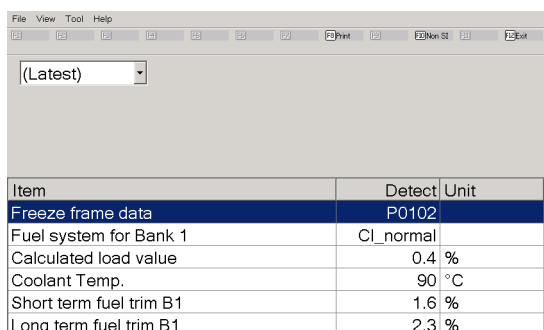
SMU-00698



## Freeze Frame Data Display

Selecting [Freeze Frame Data Display] on the OBD menu displays a screen like the one shown below. This screen can be used to check the input data to the control module at the point that the OBD system fault is detected.

The dialog box at the top of the screen can be used to select and display the data for up to three fault detection instances.

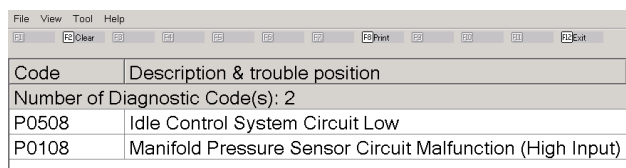


Item	Detect	Unit
Freeze frame data	P0102	
Fuel system for Bank 1	Cl_normal	
Calculated load value	0.4	%
Coolant Temp.	90	°C
Short term fuel trim B1	1.6	%
Long term fuel trim B1	2.3	%

SMU-00297

## Diagnostic Code Display

Selecting [Diagnostic Code(s) Display] on the OBD menu displays a screen like the one shown below. This screen can be used to check diagnostic codes detected by the OBD system.



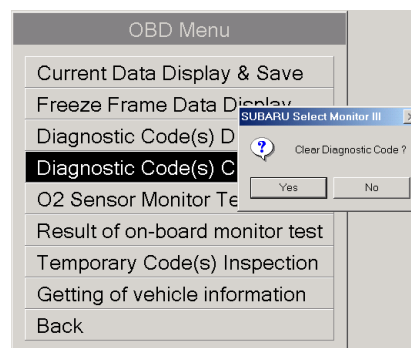
Code	Description & trouble position
Number of Diagnostic Code(s): 2	
P0508	Idle Control System Circuit Low
P0108	Manifold Pressure Sensor Circuit Malfunction (High Input)

SMU-00298

## Diagnostic Code Clear

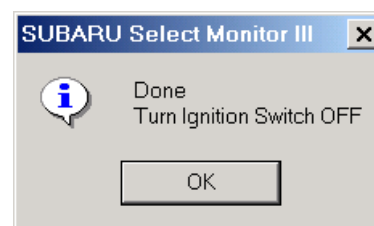
Selecting [Diagnostic Code(s) Cleared] on the OBD menu displays a dialog box like the one shown below.

As instructed by the dialog box text, click the [Yes] button to delete the diagnostic codes memorized by the control module.



SMU-00299

Executing the diagnostic clear operation causes the message shown below to appear. Click the [OK] button.

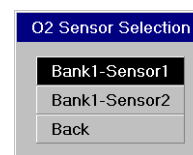


SMU-00240

## O2 Sensor Monitor

Selecting [O2 Sensor Monitor Test] on the OBD menu displays a screen like the one shown below. (This display screen is an example.)

The O2 sensor related control module input signal and control data screen can be displayed by selecting the item on the display that conforms to the vehicle being inspected. This makes it possible to check the current O2 sensor status.



SMU-00547

### NOTE:

Some functions may not be available in the case of certain vehicle models and vehicle specifications.



## Onboard Monitor Test Results

Selecting [Result of on-board monitor test] on the OBD menu displays a screen like the one shown below.

TID	CID	Min.	Val.	Max.	Result
\$41	\$01	\$0064	\$00FF	\$----	OK
\$41	\$02	\$----	\$0026	\$0033	OK
\$81	\$01	\$----	\$0000	\$FFFF	OK
\$83	\$01	\$----	\$0000	\$FFFF	OK
\$83	\$02	\$----	\$0000	\$FFFF	OK
\$83	\$03	\$----	\$0000	\$FFFF	OK
\$84	\$01	\$----	\$0000	\$0979	OK
\$85	\$01	\$----	\$0000	\$000A	OK

SMU-00302

## Temporary Code Check

Selecting [Temporary Code(s) Inspection] on the OBD menu displays a screen like the one shown below.

This screen shows temporary codes detected by the OBD system.

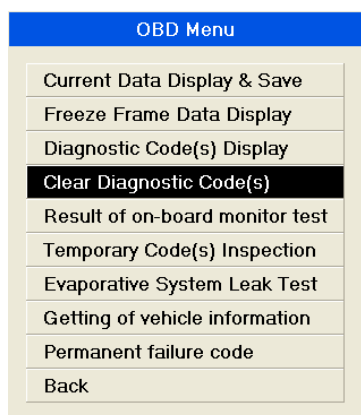
Code	Description & trouble position
Temporary Diagnostic Code(s) 2	
P0102	Mass or Volume Air Flow Circuit Low
P0113	Intake Air Temperature Sensor Circuit Malfunction (High Input)

SMU-00303

## Evaporative System Leak Test

### IMPORTANT:

- Before executing the Evaporative System Leak Test, select [Clear Diagnostic Code(s)] on the OBD menu screen and clear the diagnostic code(s).



SMU-01236

- After clearing the diagnostic code(s), select [Result of on-board monitor test] on the OBD menu screen and confirm the values of the Val. columns of ELCM related items (shown as "\$3C" in MID columns) are "\$0000".

MID	TID	Val.	M
\$36	\$8C	\$0000	\$i
Unit and Scaling ID : \$9D			
\$3C	\$C1	\$0000	\$i
Unit and Scaling ID : \$FE			
\$3C	\$C2	\$0000	\$i
Unit and Scaling ID : \$FF			

SMU-01237

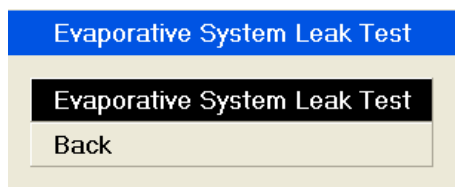
- Repeating the Evaporative System Leak Test without starting the engine will result in accumulation of evaporation gas components, making it impossible to diagnose correctly. If the Evaporative System Leak Test is executed for five consecutive times, warm up the engine and let the vehicle run for more than 10 cumulative minutes at the speed of more than 48km/h in order to purge the canister.
- Repeating the Evaporative System Leak Test without starting the engine may lead to reduction in battery voltages. Execute the Evaporative System Leak Test while paying attention to the decrease in battery voltages.
- Do not execute the Evaporative System Leak Test in cases listed below. Otherwise, correct diagnosis results may not be obtained, or the Evaporative System Leak Test may not possibly be executed.
  - When the vehicle is bouncing or swaying.
  - When the residual amount of fuel is more than 90% of the capacity of the fuel tank.
  - In the middle of fueling or immediately after fueling.
  - When the fuel filler cap is open.
  - When the ELCM connector is disconnected.
  - When the canister is removed.
  - When the hose between the ELCM and the canister is disconnected.
  - When the hose between the ELCM and the canister is obstructed.
  - When the hose between the canister and the fuel tank is disconnected.
  - When the hose between the canister and the fuel tank is obstructed.
  - When the hose between the canister and the CPC is disconnected.



- When the hose between the ELCM and the air filter is obstructed.
- When the hose between the air filter and the air discharge opening is obstructed.

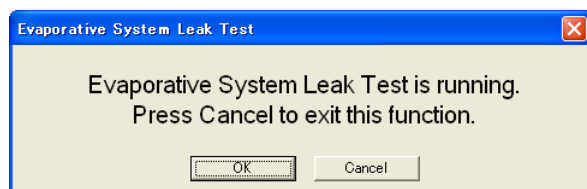
1. Selecting [Evaporative System Leak Test] on the OBD menu screen displays the screen shown below.

Proceed to the Evaporative System Leak Test execution screen by selecting [Evaporative System Leak Test].



SMU-01238

2. On the Evaporative System Leak Test confirmation dialog box that appears, click the [OK] button.



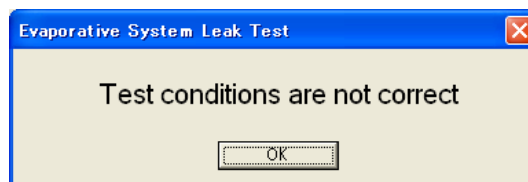
SMU-01239

#### NOTE:

Listed below are conditions for executing the Evaporative System Leak Test.

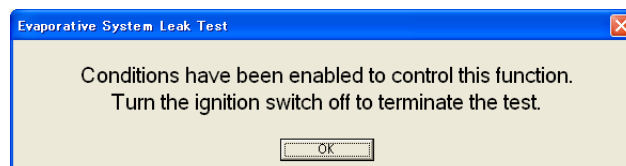
- The ignition switch should be ON.
- The battery voltage should be higher than 10.9V.
- The coolant temperature should be higher than 4.4°C (39.9°F), but lower than 45°C (113°F).
- The intake air temperature should be higher than 4.4°C (39.9°F), but lower than 50°C (122°F).
- The engine should be stopped.
- The dealer check mode should not be activated.

The screen shown below will be displayed if any of the above execution conditions is not satisfied. Click the [OK] button and execute the Evaporative System Leak Test again after all the conditions are satisfied.



SMU-01240

3. The following screen is displayed. Confirm the display contents and then click the [OK] button.

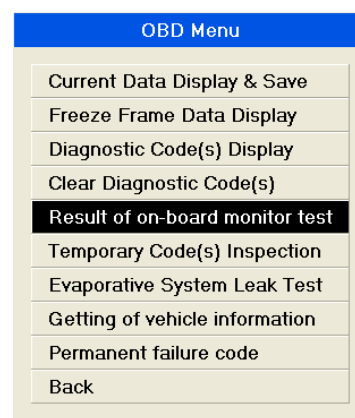


SMU-01241

#### NOTE:

Clicking the [OK] button on the above screen does not result in suspension of the Evaporative System Leak Test.

4. On the OBD menu, select the [Result of on-board monitor test].



SMU-01242



5. The result of on-board monitor test will be displayed on the screen. Please wait until the Evaporative System Leak Test is completed. Appearance of values other than “\$0000” in the Val. columns, Min. columns and Max. columns of ELCM related items (shown as “\$3C” in MID columns) indicates completion of the Evaporative System Leak Test.

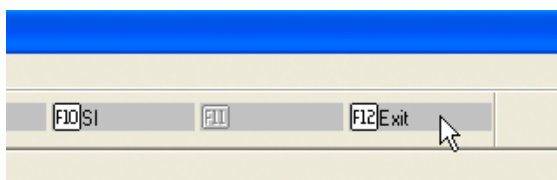
MID	TID	Val.	Min.	Max.	Result
\$36	\$8C	\$0000	\$0000	\$0000	OK
Unit and Scaling ID : \$9D					
\$3C	\$C1	\$DCD5	\$8000	\$FC81	OK
Unit and Scaling ID : \$FE					
\$3C	\$C2	\$DB9C	\$BCF2	\$7FFF	OK
Unit and Scaling ID : \$EE					

SMU-01243

**NOTE:**

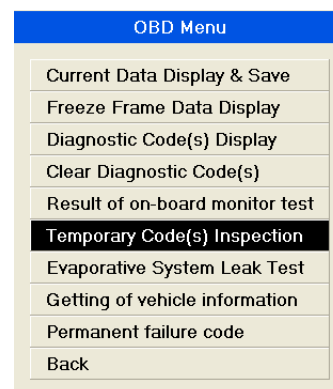
- It takes about 10 to 30 minutes until the Evaporative System Leak Test is completed.
- If the Evaporative System Leak Test is not completed even after elapse of more than 30 minutes, it is likely that the Evaporative System Leak Test has been suspended since any of the execution conditions is no longer satisfied. Execute the Evaporative System Leak Test again after all the conditions are satisfied.

6. Click the [Exit] button after the Evaporative System Leak Test is completed.



SMU-01244

7. On the OBD menu, select the [Temporary Code(s) Inspection].

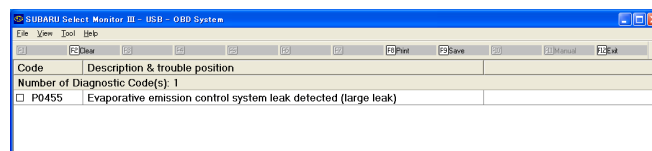


SMU-01245

**IMPORTANT:**

Turning off the ignition switch may lead to clearance of all the Temporary Diagnostic Code(s).

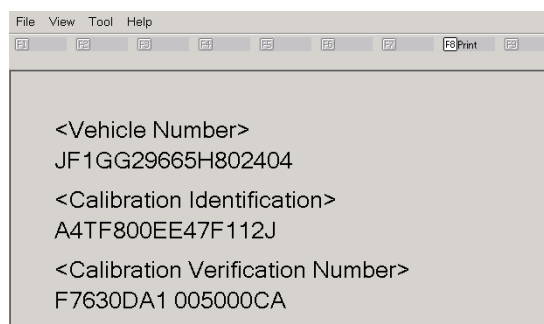
8. This displays the Temporary Code(s) Inspection screen.



SMU-01246

**Get Vehicle Info**

Selecting [Getting of vehicle information] on the OBD menu displays a screen like the one shown below.



SMU-00304

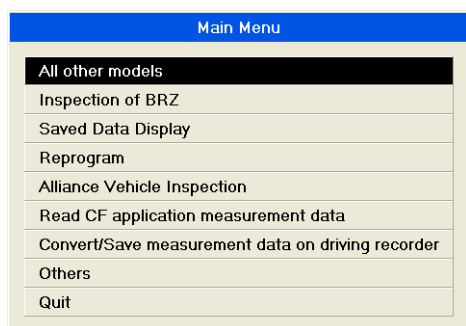


## Function Check Sequence

The brake control system fault diagnosis screen includes a function check sequence item. The function check sequence can be used to perform checks of ABS system and VDC system hydraulic control valve operation, and to set the center point of the VDC system steering angle sensor and the 0 point of the lateral G sensor.

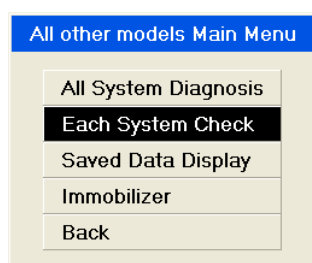
### Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



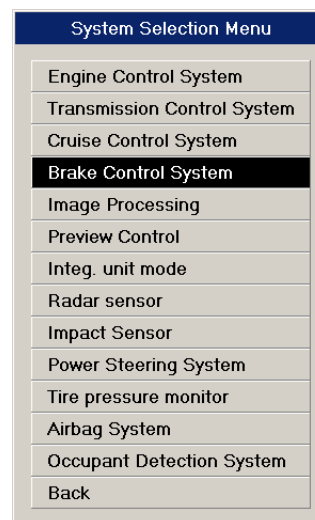
SMU-01294

3. Select [Each System Check] at the item selection screen.



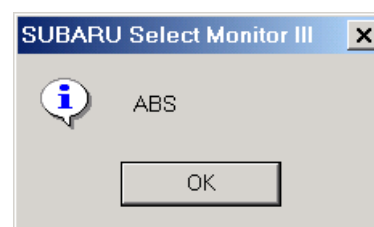
SMU-01296

4. On the System Selection Menu, select [Brake Control System] and then press the Enter key or left-click with the mouse.



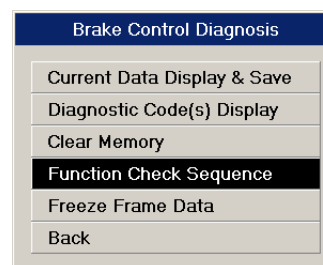
SMU-00669

5. This displays a compliance verification message for the brake control system. Click the [OK] button.



SMU-00308

6. From the list of fault diagnosis items, select [Function Check Sequence] and then press the Enter key or left-click with the mouse.



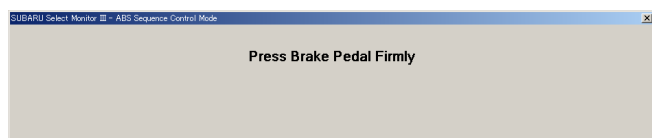
SMU-00607



## ABS Function Check Mode

Selecting the check sequence for a vehicle equipped with an ABS causes the screen shown below to appear.

Perform the procedure as instructed by the text on the screen will automatically enter the ABS function check mode and perform a hydraulic control valve operation check.



SMU-00670

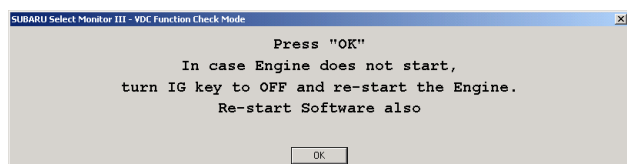
### NOTE:

- Keep the brake pedal depressed until the check is complete. Releasing the brake pedal while checking is part way through will result in an incorrect check.
- Connection of the delivery mode fuse (test mode connector) is not required for this check.
- Be sure to refer to the Service Manual when performing this check.

## VDC Function Check Mode

Selecting the check sequence for a vehicle equipped with a VDC causes the screen shown below to appear.

Perform the procedure as instructed by the text on the screen will automatically enter the VDC function check mode and perform a hydraulic control valve operation check.



SMU-00413

### NOTE:

- Connection of the delivery mode fuse (test mode connector) is not required for this check.
- Be sure to refer to the Service Manual when performing this check.

## Steering Angle Sensor Neutral and Lateral G Sensor Zero Setting Mode

Selecting the steering angle sensor neutral and lateral G sensor zero setting mode for a vehicle equipped with a VDC causes the screen shown below to appear.

Follow the instructions that appear on the screen to set steering sensor neutral and lateral G sensor zero.



SMU-00414

### NOTE:

- Connection of the delivery mode fuse (test mode connector) is not required for this check.
- Be sure to refer to the Service Manual when performing this setting operation.



## Fault Data Display

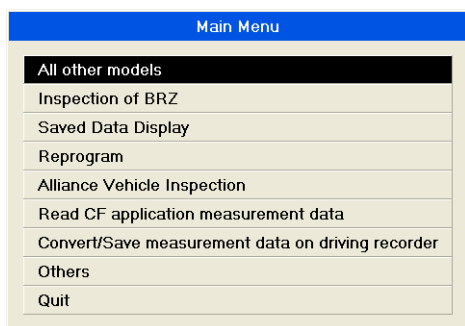
This display makes it possible to check control module input data and the module control status when the brake control system control module detects a fault.

### NOTE:

Even if memory clear is carried out, the trouble information may not be removed.

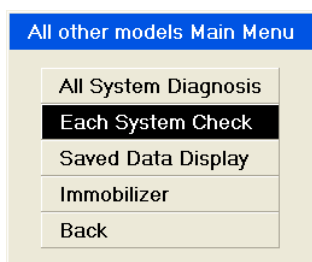
### Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



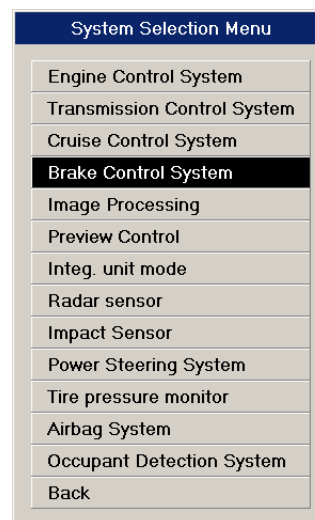
SMU-01294

3. Select [Each System Check] at the item selection screen.



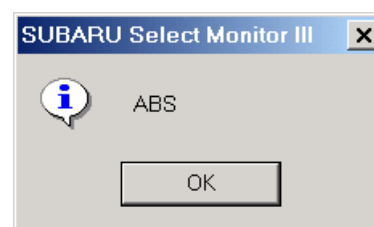
SMU-01296

4. On the System Selection Menu, select [Brake Control System] and then press the Enter key or left-click with the mouse.



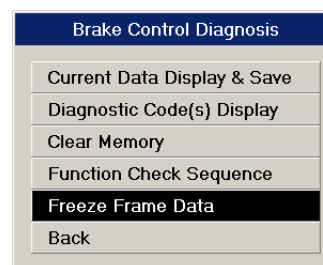
SMU-00669

5. This displays a compliance verification message for the brake control system. Click the [OK] button.



SMU-00308

6. From the list of fault diagnosis items, select [Freeze Frame Data] and then press the Enter key or left-click with the mouse.

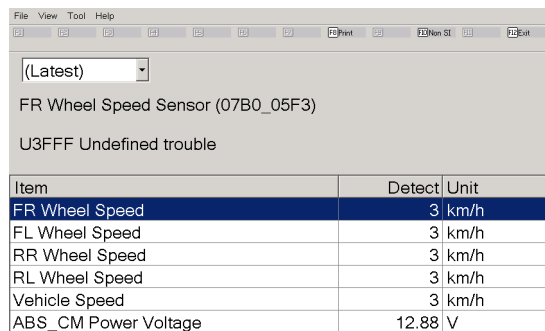


SMU-00608



7. Selecting [Freeze Frame Data] displays a screen like the one shown below.

The select box at the top of the screen can be used to select and display the data for up to three fault detection instances.



Item	Detect	Unit
FR Wheel Speed	3	km/h
FL Wheel Speed	3	km/h
RR Wheel Speed	3	km/h
RL Wheel Speed	3	km/h
Vehicle Speed	3	km/h
ABS_CM Power Voltage	12.88	V

SMU-00316

#### NOTE:

- The control module always maintains the three latest fault information entries in memory.
- If the screen shows a diagnostic code with a question mark (?), it means that the fault information was not stored correctly by the control module when the fault was detected.



## Selection of Parameter

This function is used to select/register parameters when the VDC control module has been replaced with a normal spare part.

### NOTE:

- Always execute “Clear Memory” after operating this function.
- This function cannot be used with a control module that is not a normal spare part.
- Depends on the applied model, vehicle destination market confirmation screen will be displayed. Click the [Yes] or [No] button that correspond to vehicle destination market.
- Depends on the applied model, it is necessary to enter 4 digits of option code shown on “model No. plate”. If the option code is 3 digits, add “0” to the first digit and enter as 4 digits.
- To confirm the applied model and option code, refer to the “model No. plate” affixed to the vehicle. The location of the model No. plate is shown in the Service Manual.

FUJI HEAVY INDUSTRIES LTD.					
VIN	4S4WX82DX74400001				
Applied Model Modèle Concerné	WXEY2U	Option Code Code d'option	U4GH	Trim Code Code de garniture	D20
Engine Type Modèle de moteur	EZ30DBL2GB	Transmission Type Modèle de boîtes vitesse	TG5C9CMAAA	Color Code Code de couleur	32D

SMU-01192

## Registration Procedure

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] at the displayed main menu.

Main Menu
All other models
Inspection of BRZ
Saved Data Display
Reprogram
Alliance Vehicle Inspection
Read CF application measurement data
Convert/Save measurement data on driving recorder
Others
Quit

SMU-01294

3. Select [Each System Check] at the item selection screen.

All other models Main Menu
All System Diagnosis
Each System Check
Saved Data Display
Immobilizer
Back

SMU-01296

4. On the System Selection Menu, select [Brake Control System] and then press the Enter key or left-click with the mouse.

System Selection Menu
Engine Control System
Transmission Control System
Cruise Control System
Brake Control System
Image Processing
Preview Control
Integ. unit mode
Radar sensor
Impact Sensor
Power Steering System
Tire pressure monitor
Airbag System
Occupant Detection System
Back

SMU-00669

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.

SUBARU Select Monitor III
 VDC
OK

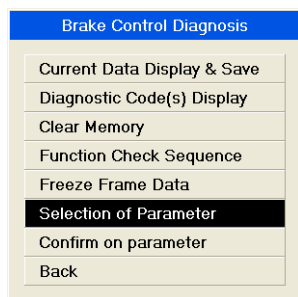
SMU-00869



6. From the list of fault diagnosis, select [Selection of Parameter] and then press the Enter key or left-click with the mouse.

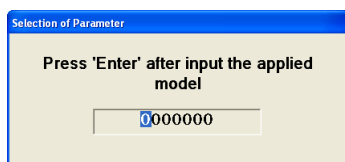
**NOTE:**

If the applied model and grade are different than those of the vehicle, execute the registration procedure again after clicking the [OK] button.



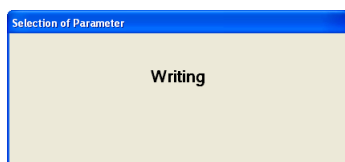
SMU-00870

7. Input the applied model and press the Enter key.



SMU-00871

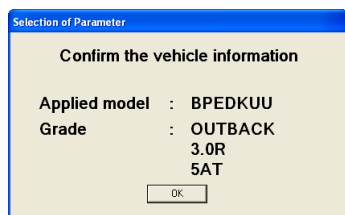
8. Stand by as the message below will appear on the screen.



SMU-00872

9. The vehicle information check screen will be displayed.

Make sure that the applied model and grade shown on the screen are correct and then click the [OK] button.



SMU-00873



## Confirm on Parameter

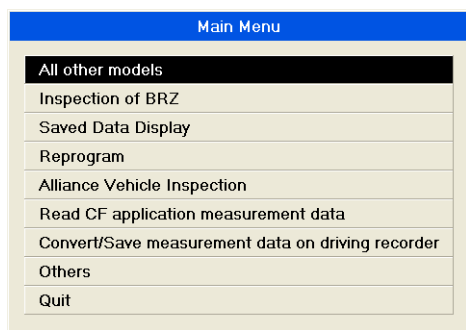
This function allows you to confirm the parameters registered in the VDC control module.

### NOTE:

This function can be used even if the VDC control module is not a normal spare part.

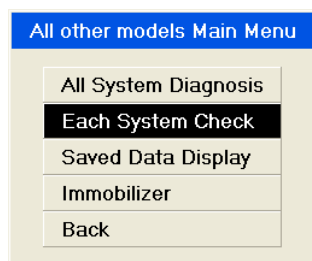
## Confirm Procedure

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] at the displayed main menu.



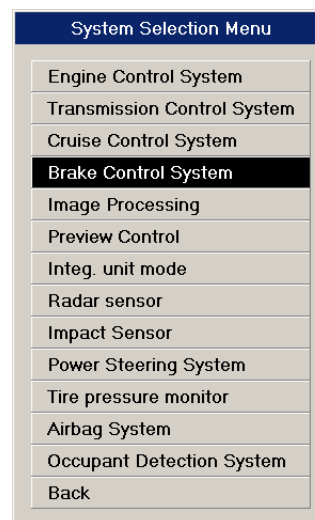
SMU-01294

3. Select [Each System Check] at the item selection screen.



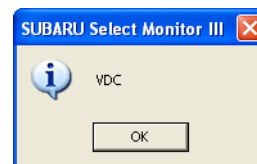
SMU-01296

4. On the System Selection Menu, select [Brake Control System] and then press the Enter key or left-click with the mouse.



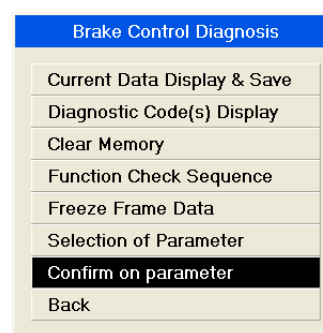
SMU-00669

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00869

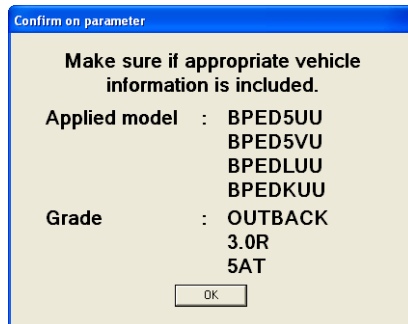
6. From the list of fault diagnosis, select [Confirm on Parameter] and then press the Enter key or left-click with the mouse.



SMU-00874



7. The parameter confirm screen will be displayed. Make sure the “Applied model” and “Grade” of the pertinent vehicle are displayed, and then click the [OK] button.



SMU-00875



## Body Integrated Module Destination Market Registry (Excluding Japan)

When the body integrated module has been replaced by a normal spare part, the vehicle destination information is set to the body integrated module.

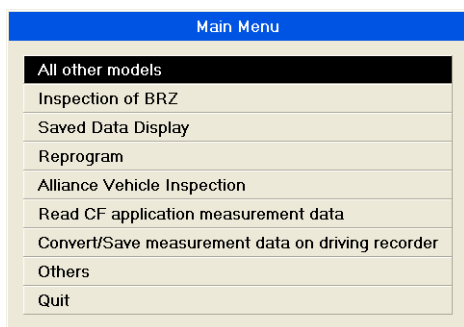
### NOTE:

- Body integrated module destination registry is a function for markets other than Japan.
- This function cannot be used with a control module that is not a normal spare part.
- Upon replacement of body integrated module, vehicle destination input is necessary. Please confirm market destination of the vehicle which the module replacement is to be performed, before the module is replaced by a spare part.

## Confirmation of Vehicle Destination (Part 1)

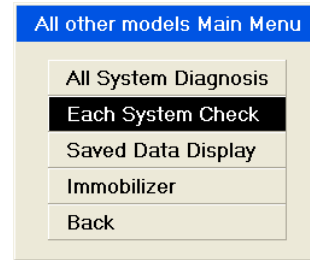
Confirm the vehicle destination registered in the body integrated module prior to replacement.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



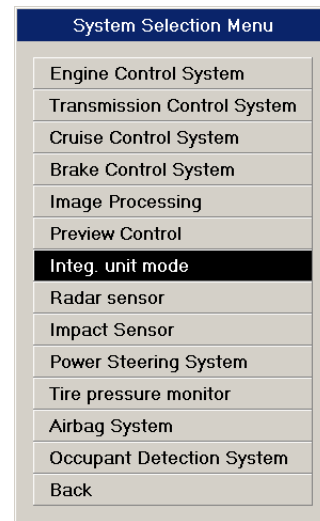
SMU-01294

3. Select [Each System Check] at the item selection screen.



SMU-01296

4. On the System Selection Menu, select [Integ. unit mode] and then press the Enter key or left-click with the mouse.



SMU-00672

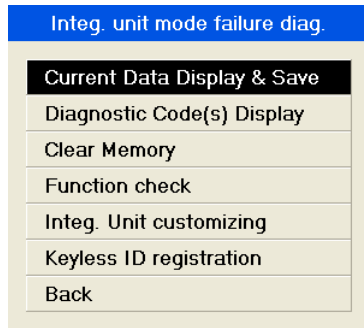
5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00380



6. From the list of fault diagnosis items, select [Current Data Display & Save] and then press the Enter key or left-click with the mouse.



SMU-01103

7. When digital data is displayed as shown below, scroll down and confirm the item [Destination Setting]. The value shown defines the market the vehicle is destined for.

Item	Value	Unit	Maximum
<input type="checkbox"/> wiperdeicer	support		-
<input type="checkbox"/> Sedan/Wagon Setting	Sedan		-
<input type="checkbox"/> MT/AT Setting	AT		-
<input type="checkbox"/> 6MT Setting	Other than 6MT		-
<input checked="" type="checkbox"/> Destination Setting	---		-
<input type="checkbox"/> Factory initial setting	Market		-

SMU-01104

## Confirmation of Vehicle Destination (Part 2)

If market destination is impossible to obtain digitally (e.g. when the body integrated module is out of order), refer to [Model Number Label] fixed onto the vehicle itself.

The location of the model number label is shown in the Service Manual.

### For right-hand drive models

Confirm vehicle destination by "Applied Model" number row of the model number label, in which 5th out of 7 digits (count from left) distinguish the market vehicle is intended for.

Applied Model Number	5th Digit	Destination
****K**	K	EK, ER
****4**	4 or 5	JP
****5**		

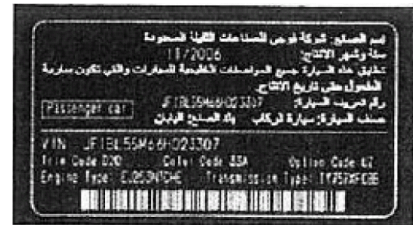


SMU-01110

### For left-hand drive models

Destination market is distinguished by whether the model number label is in Arabic or not.

Model Number Label	Destination
Arabic	KS



SMU-01106

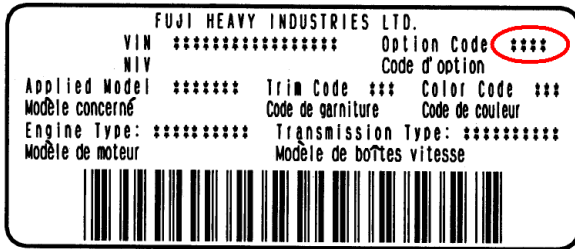
Model Number Label	Destination
Non-Arabic (Excluding North America and Korea)	EC, EL, EA, EH, E2, EP, K4, K5



SMU-01105



Model Number Label	Destination
Non-Arabic (North America and Korea)	The option code of four digits printed on the model No. label shows the vehicle destination by the first two digits.



SMU-01247

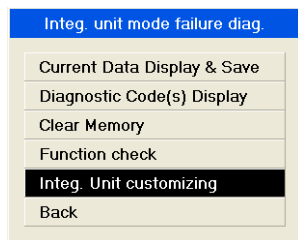
## Registration Steps for Registering Vehicle Destination

1. After the vehicle destination is confirmed, replace the body integrated module with a fresh spare.

### NOTE:

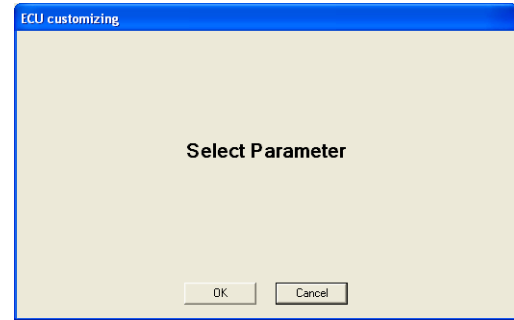
Please refer to [Service Manual](#) for instruction of body integrated module replacement.

2. Begin destination registry for the spare body integrated module.  
First, follow steps shown in column 1 through 4 of [Confirmation of vehicle destination (Part 1)] shown above.
3. From the list of fault diagnosis items, select [Integ. Unit customizing] and then press the Enter key or left-click with the mouse.



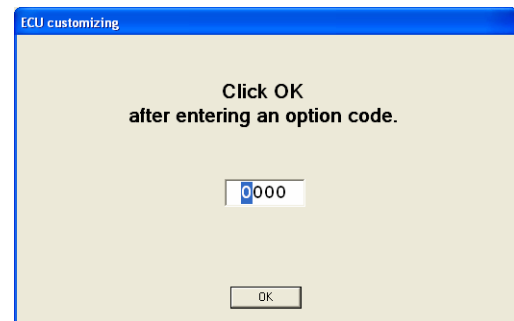
SMU-00674

4. The screen shown below will appear. Click the [OK] button.



SMU-01107

5. Option code registry screen will then be displayed. Refer to [Option Code Correlation Table] shown below, enter the option code matching the destination correlating to the result of steps shown above, and then click [OK].



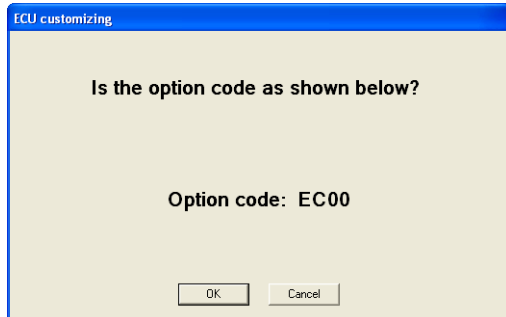
SMU-01108

### Option Code Correlation Table

Destination	Option Code
JPN	JP00
EK , ER	EK00
EC, EL, EA, EH, E2, EP, K4, K5	EC00
KS	KS00
C0, C5	C000
U4, U5, U6, C6	U400



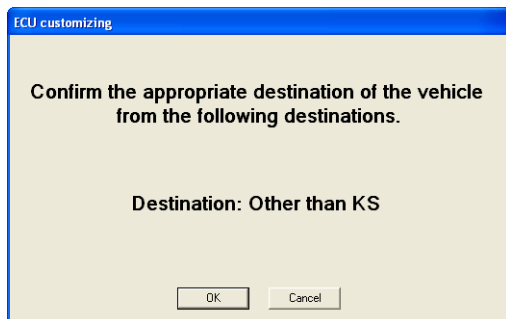
6. Screen will then display message shown below.  
Reconfirm the displayed option code with the one identified by steps previously mentioned, then click [OK] to conclude the registry operation.



SMU-01136

**NOTE:**

- In case of option code shown on screen is different from vehicle destination, execute the registration procedure again after clicking [Cancel] button.
- If customize setting executed with [Market] mode already, below screen will be displayed. Click [OK] button if vehicle destination correct. Click [Cancel] button if vehicle destination not correct and register vehicle destination again after changing customize setting to [Factory] mode. (For example: destination shown with "Other than KS")



SMU-01128

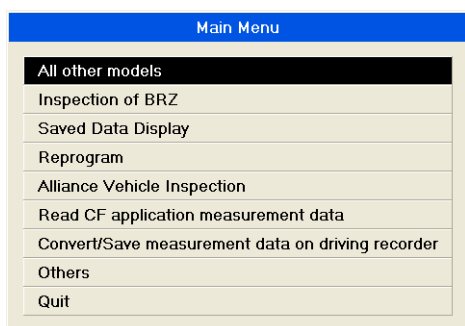


## Body Integrated Module Function Check

The following procedure can be used to force operation of the various actuators that control the body integrated module and check their operation.

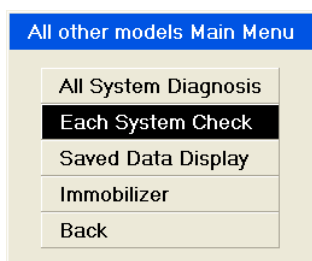
### Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



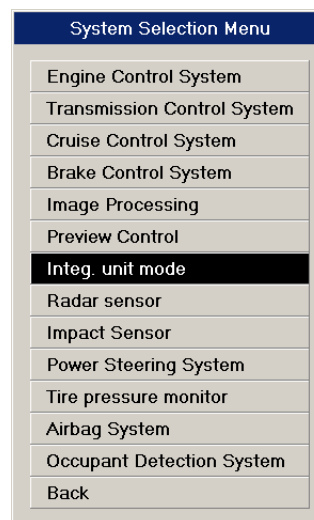
SMU-01294

3. Select [Each System Check] at the item selection screen.



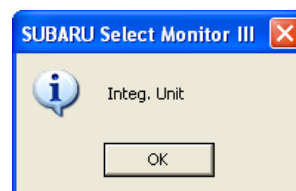
SMU-01296

4. On the System Selection Menu, select [Integ. unit mode] and then press the Enter key or left-click with the mouse.



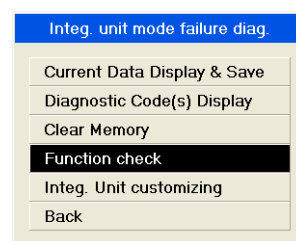
SMU-00672

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00380

6. From the list of fault diagnosis items, select [Function check] and then press the Enter key or left-click with the mouse.



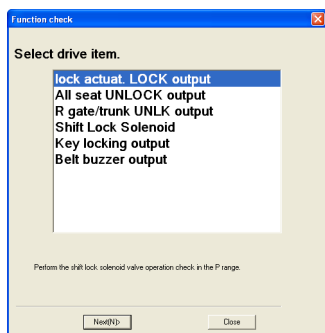
SMU-00673



On the screen that appears, select the actuator(s) to be checked, and then click the [Next] button.

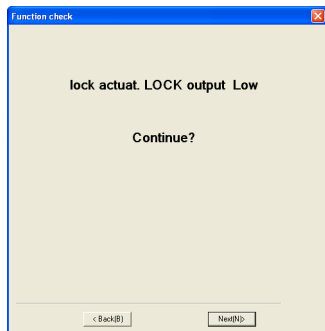
**NOTE:**

- A check mark will not appear next to an actuator when it is selected on the screen if the selected actuator is not equipped on the vehicle.
- Perform the shift lock solenoid operation check in the P range.



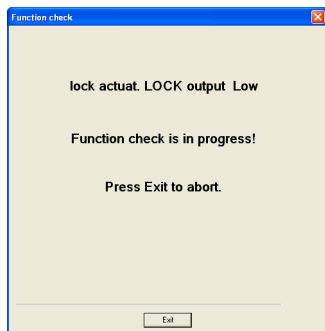
SMU-00520

This displays a screen for confirming operation of the selected actuator(s). Click the [Next] button.



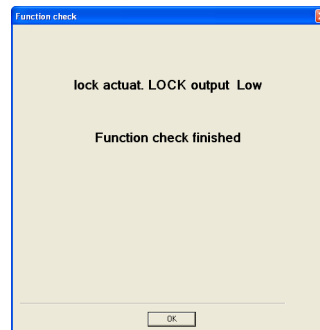
SMU-00383

This forces operation of the actuator(s). After checking the operational status of the actuator(s), click the [Exit] button.



SMU-00384

This causes a confirmation message to appear. Click the [OK] button.



SMU-00385

If the function check reveals abnormal operation in any actuator, perform repair work in accordance with the Service Manual.



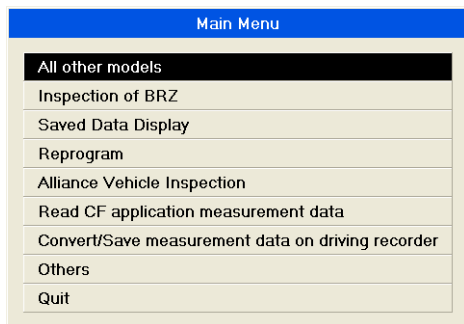
## Body Integrated Module Function Setting (Integ.Unit Customizing)

The following procedure can be used to configure operational details, operation time, and other settings for the actuators controlled by the body integrated module.

### IMPORTANT:

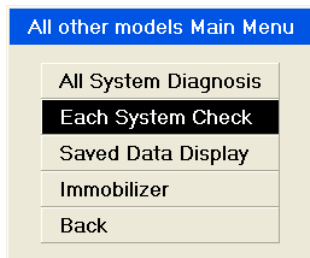
Make sure you perform setting operations in accordance with the Service Manual when using the unit customization function. Configuring the wrong settings can cause abnormal system operation and other problems.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



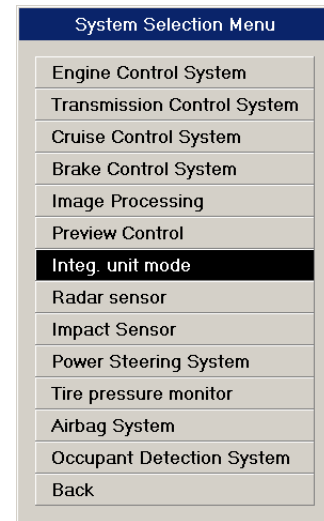
SMU-01294

3. Select [Each System Check] at the item selection screen.



SMU-01296

4. On the System Selection Menu, select [Integ. unit mode] and then press the Enter key or left-click with the mouse.



SMU-00672

### NOTE:

- To perform Automatic Light and Wiper Unit Customizing, select [Automatic Light and Wiper] at above screen and begin procedure. (Excluding North America)
- After removing or replacing rain/light sensor, initializing the sensor is necessary by selecting [Automatic Light and Wiper] on the above screen.
- To perform Auto Start Stop Unit Customizing, select [Auto Start Stop] at above screen and begin procedure.
- To perform Combination meter Unit Customizing, select [Combination meter] at above screen and begin procedure.

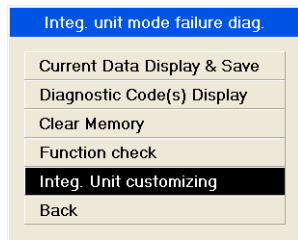
5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00380

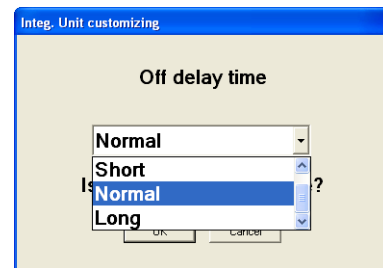


6. From the list of fault diagnosis items, select [Integ.Unit customizing] and then press the Enter key or left-click with the mouse.



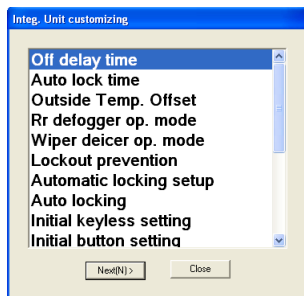
SMU-00674

This displays a customized setting screen for the selected item(s). Select the desired setting(s), and then click the [OK] button.



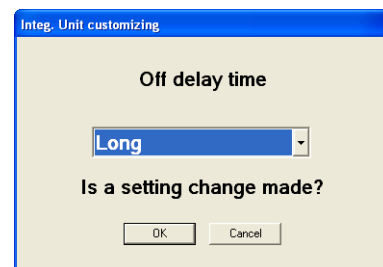
SMU-00408

On the screen that appears, select the setting(s) to be configured, and then click the [Next] button.



SMU-00391

This causes a message to appear indicating that setting configuration is complete. Click the [OK] button.



SMU-00415

#### NOTE:

- Make sure you perform setting operations in accordance with the Service Manual. Configuring the wrong settings can cause abnormal system operation and other problems.
- If there is no destination registry in the body integrated module, the screen may display message shown below.

In such case, please refer to item [Body Integrated Module Destination Market Registry (Excluding Japan)], and perform destination registry.



SMU-01107



## Display the List of Function Setting (Integ.Unit Customizing)

You can display, print, or save a list of Function Setting (Integ.Unit Customizing) status for body integrated module.

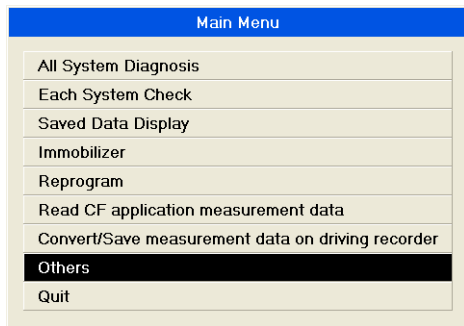
On the list, you can enter information, such as "Vehicle Registration Number", "Vehicle Number", etc.

### NOTE:

The customized setting cannot be changed from this function. To change customized setting, perform from "Integ.Unit customizing".

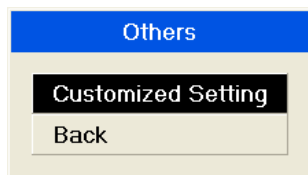
## How to Display the List

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. On the Main Menu that appears on the display, select [Others] and then press the Enter key or left-click with the mouse.



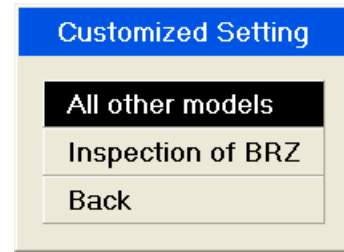
SMU-00856

3. On the Others Menu, select [Customized Setting] and then press the Enter key or left-click with the mouse.



SMU-00857

4. Select [All other models] or [Inspection of BRZ] at the displayed Customised Setting menu. (As an example, "All other models" is selected.)

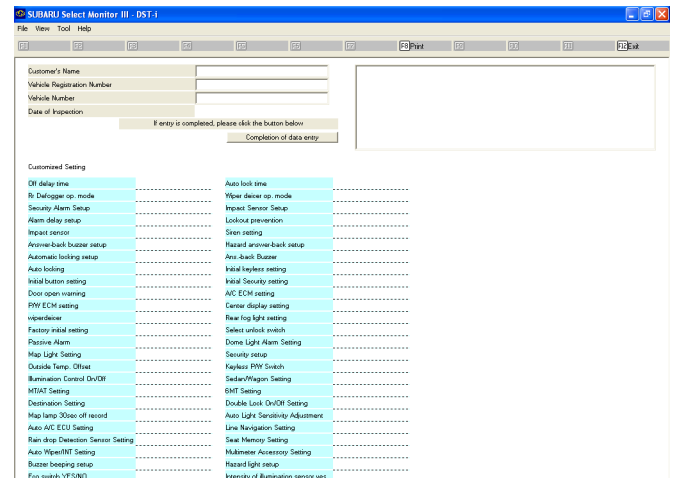


SMU-01495

5. This displays the list of Function Setting status for body integrated module.

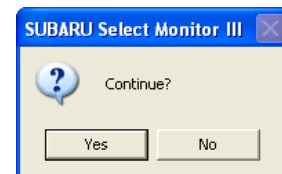
Enter information into the items; Customer's Name / Vehicle Registration Number / Vehicle Number.

Confirm the entered items and then click the [Completion of data entry] button.



SMU-01496

6. This displays a confirmation dialog box for the function setting status. Click the [Yes] button.



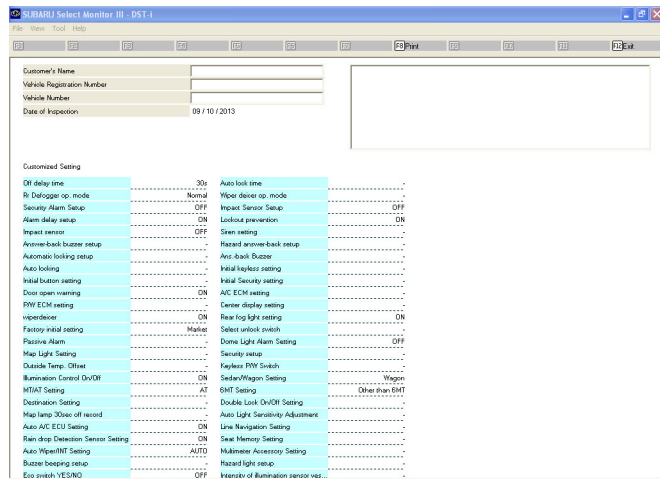
SMU-00859



7. After completing confirmation of function setting status, data will be input in blanks. This also displays a save confirmation dialog box simultaneously.

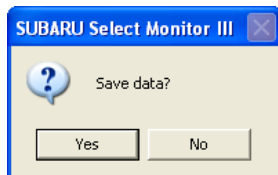
**NOTE:**

- "-" may be displayed in the case of certain vehicle models and vehicle specifications.
- The items displayed in the list depend on vehicle model and specifications.



SMU-01497

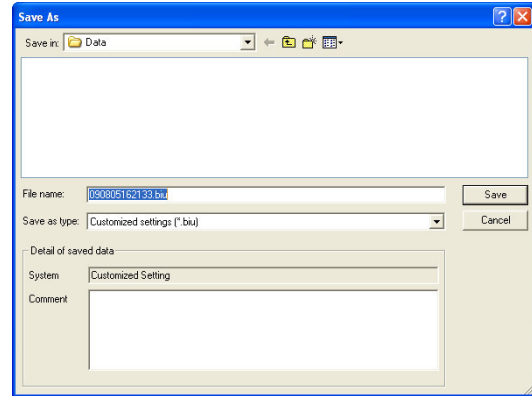
8. To save displayed data, click the [Yes] button in the save confirmation dialog box.



SMU-00861

9. This displays the "Save As" dialog box.

The name of the data file being saved is generated automatically in accordance with the current time and date. If you want to use the generated file name as-is, click the dialog box [Save] button. If you want to change to a different file name, type in the name you want.



SMU-00862

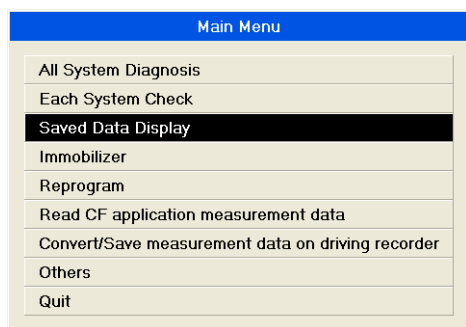
**NOTE:**

- The function setting status file is saved in the Data folder where the PC application is installed. To change to another storage location, specify the location you want in the Save in box of the save data dialog box.
- The Comment box of the Save As dialog box can be used to save general comments associated with the data or file.



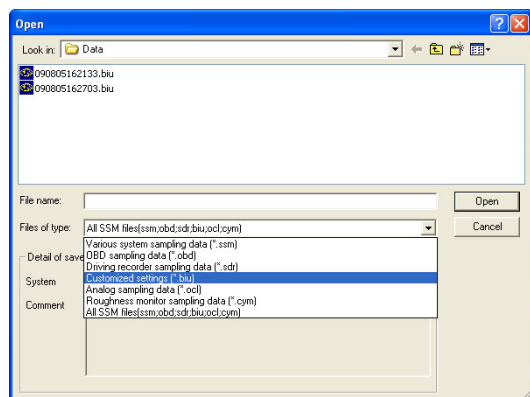
## Displaying Saved Files

1. On the Main Menu, select [Saved Data Display] and then click with the mouse.



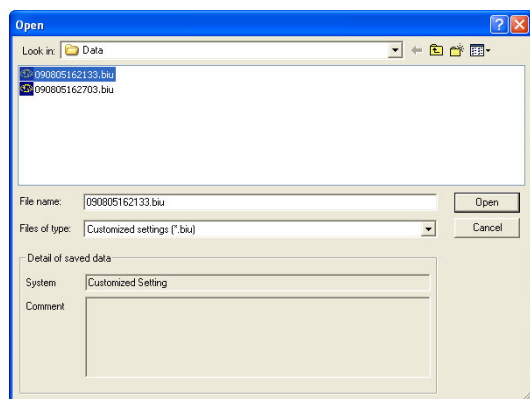
SMU-00863

2. This displays the "Open" dialog box. Click "Files of type" and select {Customized settings (\*.biu)}.





SMU-00864

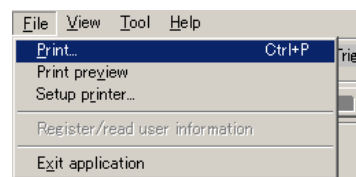
3. After selecting the desired file, clicking the [Open] button allows to open saved file.



SMU-00865

## Printing the Data

Click the [File] menu and then select [Print]. You can also print by clicking the  icon on the Data List Toolbar, by clicking the  button on the Function Key Bar, or by pressing the F8 function key on the PC keyboard.



SMU-00666

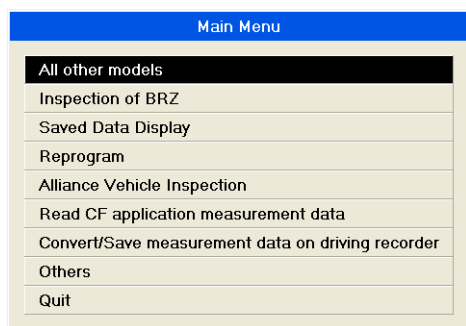


## Impact Sensor

Impact Sensor sensitivity adjustment on the security system can be done by this function.

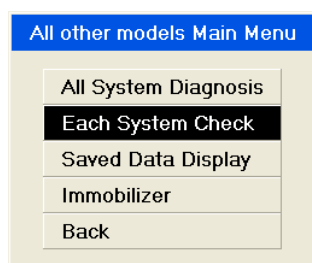
It is necessary to refer to service manuals when you do this adjustment.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



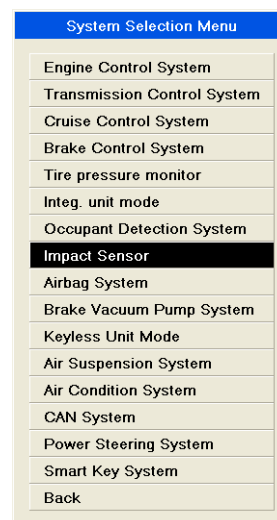
SMU-01294

3. Select [Each System Check] at the item selection screen.



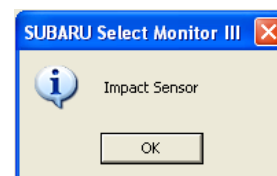
SMU-01296

4. On the System Selection Menu, select [Impact Sensor] and then press the Enter key or left-click with the mouse.



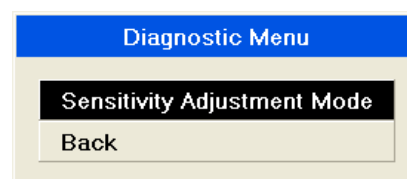
SMU-01024

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



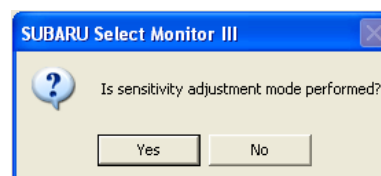
SMU-01025

6. On the Diagnostic Menu, select [Sensitivity Adjustment Mode] and then press the Enter key or left-click with the mouse.





SMU-01026

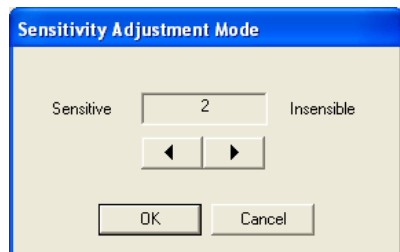
7. This displays an execution confirmation message of the Sensitivity Adjustment Mode. Click the [Yes] button.



SMU-01027



8. Sensitivity Adjustment Mode dialog box appears. Select a sensitivity value of the Impact Sensor by clicking   button and then click the [OK] button. It can be selected by pressing left and right arrow keys on the PC, too.



SMU-01028

**NOTE:**

- The bigger the value of the sensitivity, the lower the Impact Sensor sensitivity is.
- If the sensitivity adjustment could not be done normally, a buzzer sounds 4 times.

9. Sensitivity adjustment confirmation message appears. Click the [OK] button.



SMU-01029

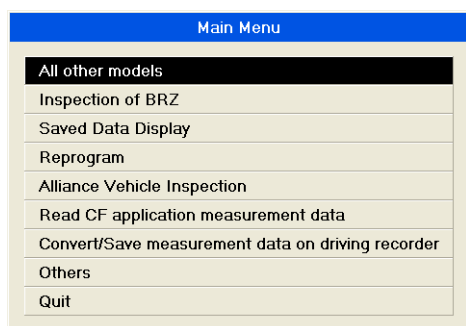


## Camera Adjustment

When adjust a camera for ADA systems, use this function.

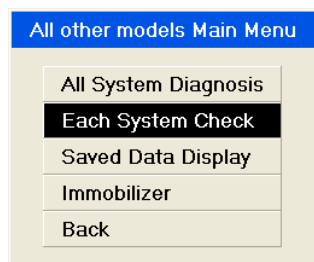
### NOTE:

- Be sure to refer to the Service Manual when performing camera adjustment.
  - About [Camera adjustment, inspection] for EyeSight, refer to a service manual.
1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
  2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



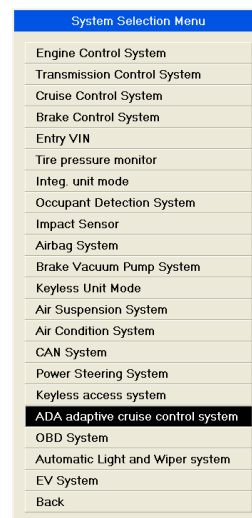
SMU-01294

3. Select [Each System Check] at the item selection screen.



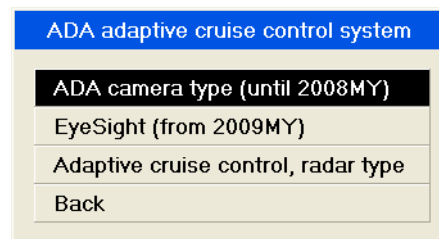
SMU-01296

4. Select [ADA adaptive cruise control system] at the System Selection Menu.



SMU-01254

5. Choose a type among the choice screen of the item. (As an example, [ADA camera type (until 2008MY)] is selected.)



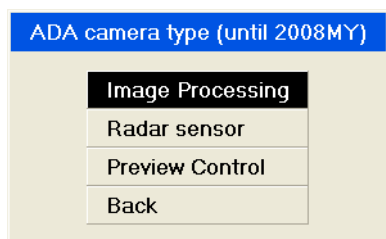
SMU-01255

### NOTE:

- [ADA camera type (until 2008MY)] and [Adaptive cruise control, radar type] support only Japanese models.
- When perform Camera adjustment / inspection in EyeSight after 2010MY, choose [EyeSight (from 2009MY)] while pushing a P-CR OFF switch and LANE OFF switch attached to a camera cover at the same time.

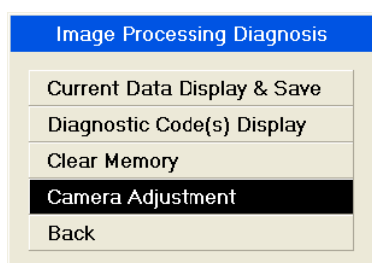


6. Select [Image Processing] at the item selection screen.



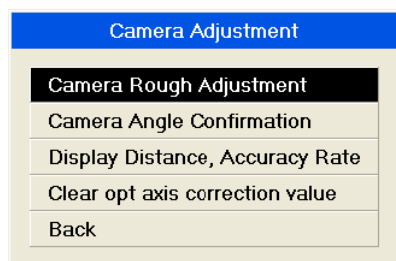
SMU-01256

7. Select [Camera Adjustment] at the fault diagnosis items screen.



SMU-01257

8. Camera adjustment screen is displayed. According to adjustment procedure mentioned in a service manual, work on Camera adjustment / inspection.



SMU-01258



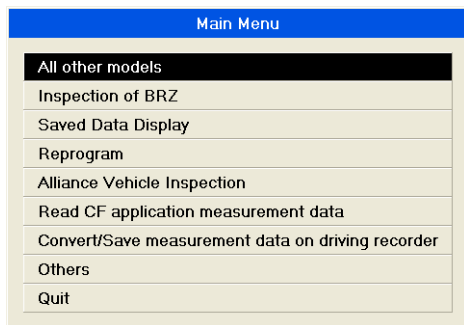
## Radar axis adjustment (ADA Camera System)

This function performs the optical axis adjustment of the Millimeter-wave Radar of the ADA camera system.

### NOTE:

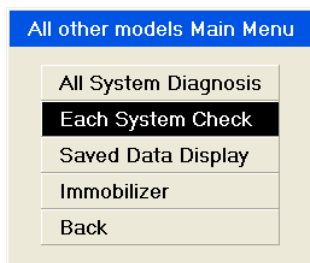
Be sure to refer to the Service Manual when performing Millimeter-wave Radar Axis Adjustment.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



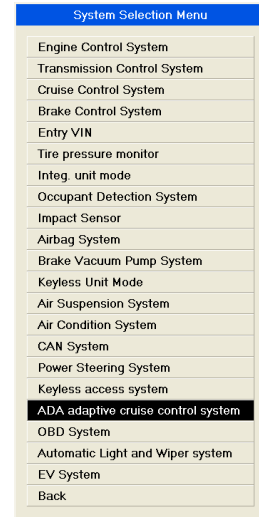
SMU-01294

3. Select [Each System Check] at the item selection screen.



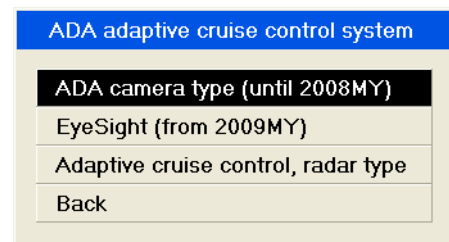
SMU-01296

4. Select [ADA adaptive cruise control system] at the System Selection Menu.



SMU-01254

5. Choose a type among the choice screen of the item. (As an example, [ADA camera type (until 2008MY)] is selected.)

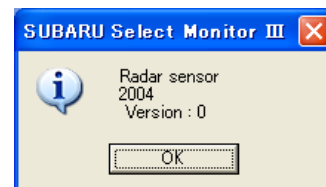


SMU-01255

### NOTE:

[ADA camera type (until 2008MY)] and [Adaptive cruise control, radar type] support only Japanese models.

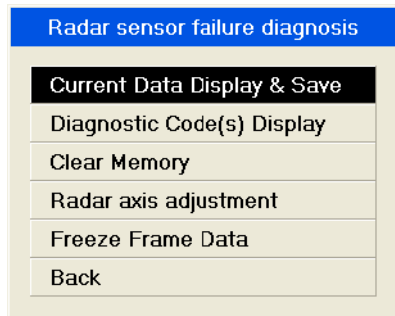
6. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-01259



7. Select [Current Data Display & Save] at the fault diagnosis items screen.



SMU-01260

shown on the screen of the PC. Make sure to refer to the Service Manual on executing the adjustment work.

8. Indicate [Distance from Target] in the data measurement screen of the PC.

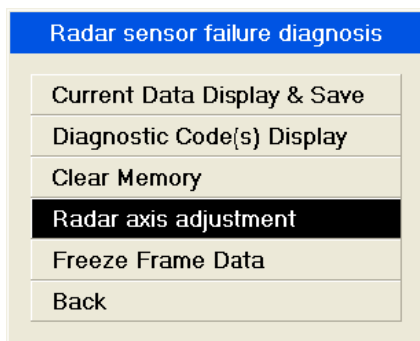
Item	Value	Unit	Maximum	Minimum	Average
<input checked="" type="checkbox"/> Power Supply Start Up	0	Time	0	0	0
<input type="checkbox"/> Unit Temperature	0	°C	0	0	0
<input type="checkbox"/> Printed Circuit Voltage	0.00	V	0.00	0.00	0.00
<input type="checkbox"/> Off Axis Value	0.00	deg	0.00	0.00	0.00
<input type="checkbox"/> Noise Level	0.000	dB	0.000	0.000	0.000
<input type="checkbox"/> Speed Error	0.000	%	0.000	0.000	0.000

SMU-01261

#### NOTE:

If [Distance from Target] displayed on the SSMIII screen is equal to or less than 8m, adjust the reflector's position in the vehicle front.

9. Select [Radar axis adjustment] at the fault diagnosis items screen.



SMU-01262

10. When a confirmation display of "optical axis adjustment" appears in the optical axis adjustment screen, click [OK] button and start measurement. Adjust millimeter wave radar of the vehicle according to the result of optical axis adjustment



## Radar axis adjustment (Adaptive cruise control system)

When adjust Laser radar for adaptive cruise control system, use this function.

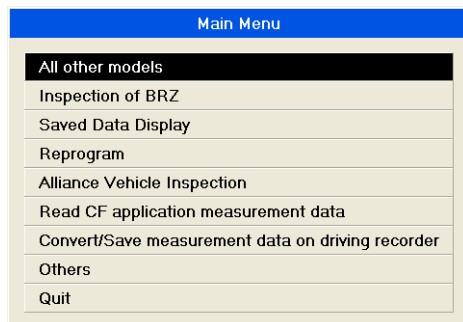
### WARNING:

In case a diagnosis should be terminated by a force-quit without completing the optical axis adjustment after having chosen [Laser Axis Adjustment] among the trouble diagnosis item, the control module regards that the optical axis adjustment has not been adjusted and determines it as the system error. In order to avoid this, on executing optical axis adjustment, make sure that all facilities and environment required for optical axis adjustment to are ready before choosing [Laser Axis Adjustment] and that the adjustment work is completed.

### NOTE:

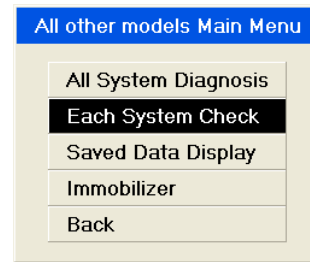
Be sure to refer to the Service Manual when performing Laser radar adjustment.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



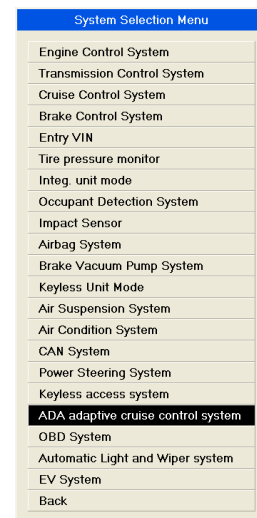
SMU-01294

3. Select [Each System Check] at the item selection screen.



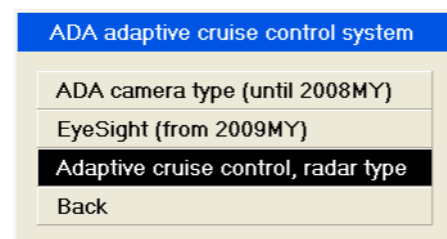
SMU-01296

4. Select [ADA adaptive cruise control system] at the System Selection Menu.



SMU-01254

5. Select [Adaptive cruise control, radar type] at the item selection screen.



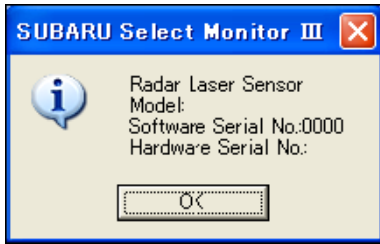
SMU-01263

### NOTE:

[ADA camera type (until 2008MY)] and [Adaptive cruise control, radar type] support only Japanese models.

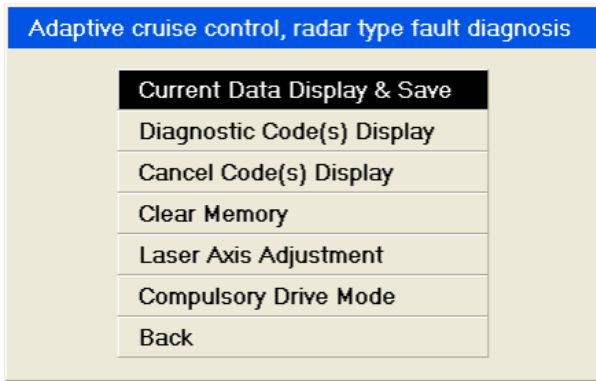


6. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-01264

7. Select [Current Data Display & Save] at the fault diagnosis items screen.



SMU-01280

8. Indicate [Distance from leading vehicle] in the data measurement screen of the PC.

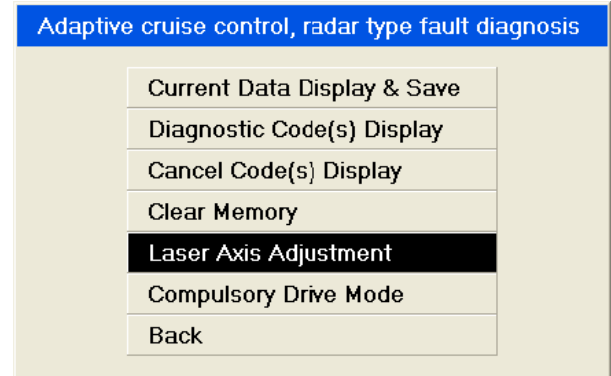
Item	Value	Unit	Maximum	Minimum	Average
<input type="checkbox"/> Cruise control set ON flag	OFF		-	-	-
<input type="checkbox"/> Cruise control main ON flag	OFF		-	-	-
<input checked="" type="checkbox"/> Distance from leading vehicle	0.0	m	0.0	0.0	0.0
<input type="checkbox"/> Relative vehicle speed	0.0	m/s	0.0	0.0	0.0
<input type="checkbox"/> Contamination detection flag	No contamination		-	-	-
<input type="checkbox"/> Sunlight flag	No sunlight		-	-	-
<input type="checkbox"/> Failure flag	Normal		-	-	-
<input type="checkbox"/> Laser operation flag	Not Operate		-	-	-
<input type="checkbox"/> Upward axis deviation flag	Normal		-	-	-
<input type="checkbox"/> Downward axis deviation flag	Normal		-	-	-
<input type="checkbox"/> Leftward axis deviation flag	Normal		-	-	-
<input type="checkbox"/> Rightward axis deviation flag	Normal		-	-	-
<input type="checkbox"/> Front vehicle target angle	0.0	deg	0.0	0.0	0.0
<input type="checkbox"/> Front vehicle target width	0.0	m	0.0	0.0	0.0
<input type="checkbox"/> Yaw rate (radar)	0.0	deg/s	0.0	0.0	0.0
<input type="checkbox"/> Vehicle stop flag	Driving		-	-	-
<input type="checkbox"/> Laser projection flag	Stop		-	-	-
<input type="checkbox"/> Vehicle speed (radar)	0.0	km/h	0.0	0.0	0.0

SMU-01281

#### NOTE:

If [Distance from leading vehicle] displayed on the SSMIII screen is equal to or less than 5m, adjust the reflector's position in the vehicle front.

9. Select [Radar axis adjustment] at the fault diagnosis items screen.



SMU-01282

10. When a confirmation display of "optical axis adjustment" appears in the optical axis adjustment screen, click [OK] button and start measurement. Adjust millimeter wave radar of the vehicle according to the result of optical axis adjustment shown on the screen of the PC. Make sure to refer to the Service Manual on executing the adjustment work.



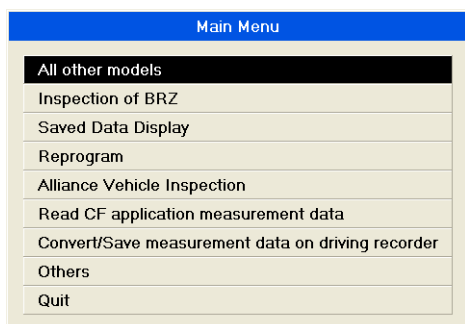
## Registering the Transmitter

This allows to register the transmitter of keyless system.

### NOTE:

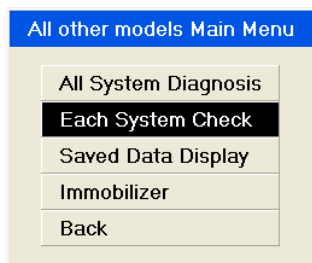
- A maximum of four transmitters can be registered for each individual vehicle.
- When replacing or adding the transmitter, you need to register the previously registered transmitter again.
- Make sure to refer to the service manual when registering a transmitter.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



SMU-01294

3. Select [Each System Check] at the item selection screen.

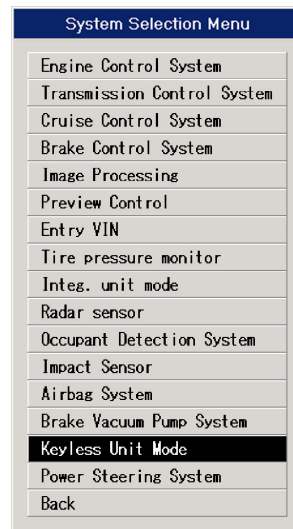


SMU-01296

4. On the System Selection Menu, select [Keyless Unit Mode] and then press the Enter key or left-click with the mouse.

### NOTE:

For model with body integrated module, select [Keyless ID registration] from [Integ. Unit Mode].



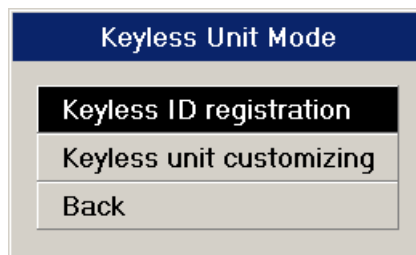
SMU-00761

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00762

6. From the list of keyless diagnosis items, select [Keyless ID registration] and then press the Enter key or left-click with the mouse.



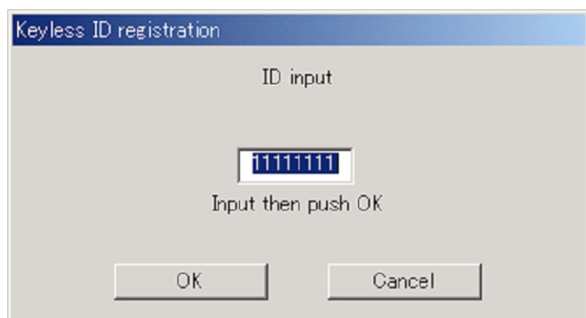
SMU-00763



7. This displays Keyless ID Input screen. Input the ID and then click the [OK] button.

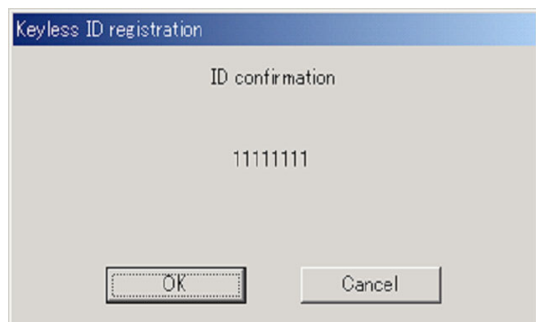
**NOTE:**

The keyless ID, eight-digit number, is attached to vinyl bag, which contains transmitter, or circuit board inside transmitter.



SMU-00764

8. This displays confirmation screen of Keyless ID which is input. Make sure that the ID displayed on screen is correct and then click the [OK] button.

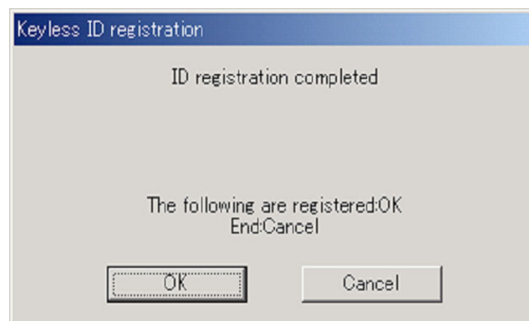


SMU-00765

9. Stand by as the keyless ID is registered.

10. The screen shown below will appear if registration ends normally.

If you have another transmitter to be registered, click the [OK] button. If you do not have any more transmitters to be registered, click the [Cancel] button and advance to step 15.



SMU-00766

11. If you need to register other transmitter, repeat steps 10 through 13.

12. After completing registration of transmitter, make sure that the transmitter is operating normally, and then quit the registration operation.

**NOTE:**

If an error is occurred during keyless ID registration, refer to the service manual and follow the instructions that appear on the screen to correct the problem.



## Keyless Entry Control Module Function Setting (Keyless unit Customizing)

The following procedure can be used to configure operational details, operation time, and other settings for the actuators controlled by the keyless control module.

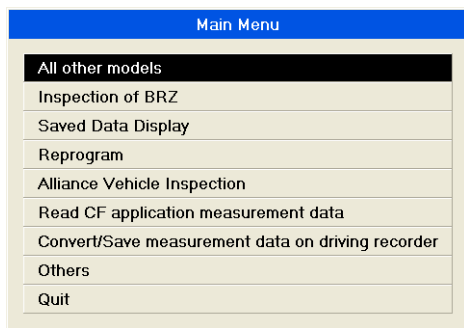
### IMPORTANT:

Make sure you perform setting operations in accordance with the Service Manual when using the unit customization function. Configuring the wrong settings can cause abnormal system operation and other problems.

### NOTE:

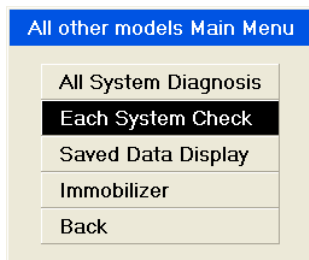
For model with body integrated module, this customizing can be performed in "Body Integrated Module Function Setting (Integ.Unit Customizing)".

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



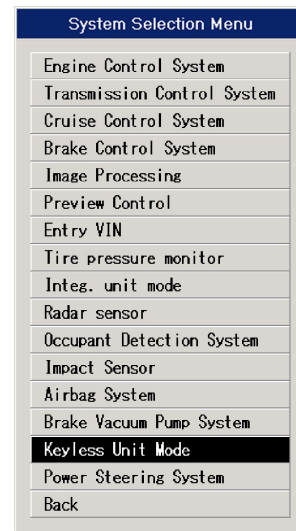
SMU-01294

3. Select [Each System Check] at the item selection screen.



SMU-01296

4. On the System Selection Menu, select [Keyless Unit Mode] and then press the Enter key or left-click with the mouse.



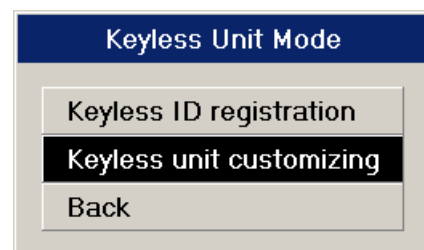
SMU-00761

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00762

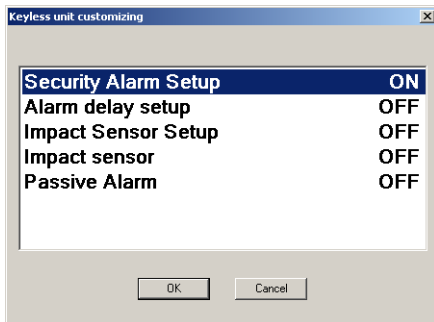
6. From the list of keyless diagnosis items, select [Keyless unit customizing] and then press the Enter key or left-click with the mouse.



SMU-00767

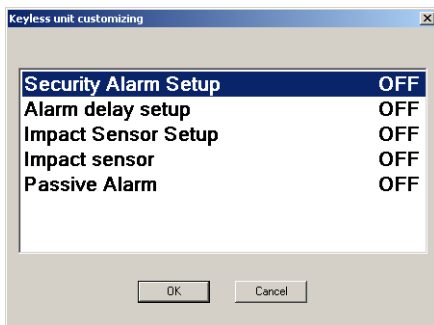


7. This displays a customized setting screen. Click the desired setting item with mouse or select it with up or down arrow key on the PC keyboard.



SMU-00768

8. After selecting item, change the setting by double-click with mouse or left or right arrow key on the PC keyboard, and then click the [OK] button.



SMU-00769



## Registering the Tire Pressure Monitoring System Transmitter (ID)

The procedure below can be used to register the tire pressure monitoring system transmitter (ID). Registration of the transmitter (ID) is required after performing any one of the following repair work procedures.

- Transmitter replacement
- Tire rotation (causing change of transmitter position)
- Tire pressure monitoring control module replacement

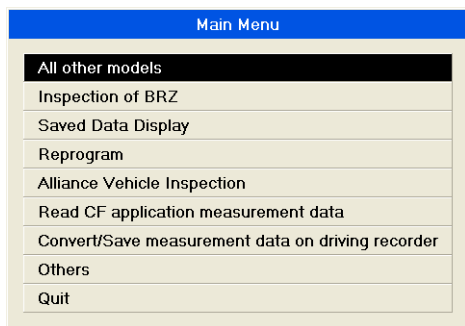
### NOTE:

Be sure to perform transmitter (ID) registration work in accordance with the Service Manual.

### Getting Ready

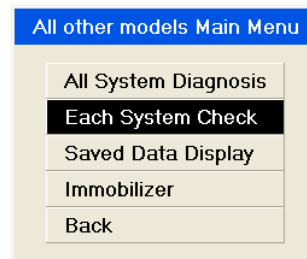
Adjust the air pressure of all of the tires so they are at the standard value.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



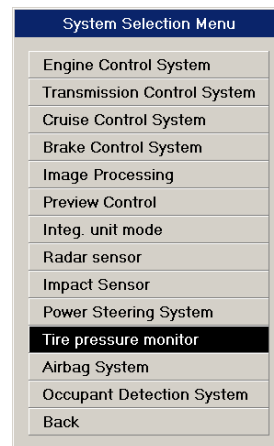
SMU-01294

3. Select [Each System Check] at the item selection screen.



SMU-01296

4. On the System Selection Menu, select [Tire pressure monitor] and then press the Enter key or left-click with the mouse.



SMU-00675

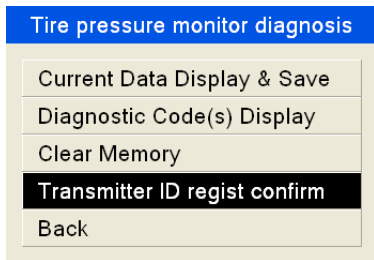
5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00395



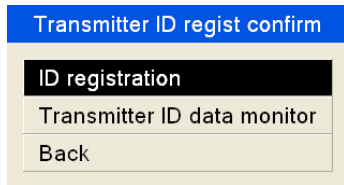
- On the Tire pressure monitor diagnosis screen, select [Transmitter ID regist confirm] and then press the Enter key or left-click with the mouse.



SMU-00396

## ID registration

- On the Transmitter ID regist confirm screen, select [ID registration] and then press the Enter key or left-click with the mouse.



SMU-00397

- This displays a confirmation screen asking if you want to delete the registered transmitter ID. Click the [OK] button.



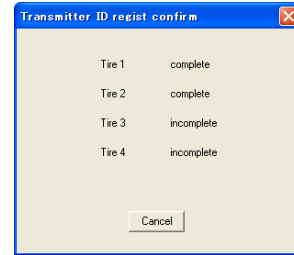
SMU-00398

- On the transmitter ID registration confirmation screen, click the [OK] button to start ID registration.



SMU-00399

The message “complete” appears when each wheel ID registration is complete.



SMU-01126

The dialog box shown below appears when ID registration for all wheels is complete.

Click the [OK] button to exit the operation.



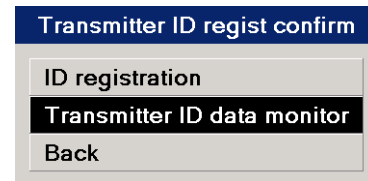
SMU-00401

### NOTE:

Registering a transmitter ID causes the previously registered ID to be deleted.

## Transmitter ID Data Monitor

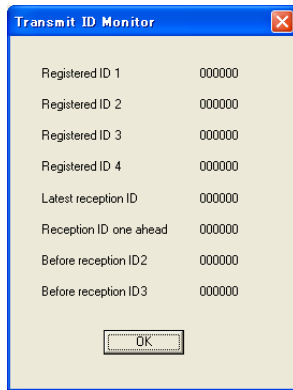
The currently registered ID data and the ID data sent from the transmitter to the tire pressure monitoring control module can be viewed by selecting [Transmitter ID data monitor] on the Transmitter ID regist confirm screen.



SMU-00402



## Transmitter ID Data Screen



Transmit ID Monitor	
Registered ID 1	000000
Registered ID 2	000000
Registered ID 3	000000
Registered ID 4	000000
Latest reception ID	000000
Reception ID one ahead	000000
Before reception ID2	000000
Before reception ID3	000000
<input type="button" value="OK"/>	

SMU-01127



## Calibrating the Occupant Detection System

The procedure below can be used to calibrate the occupant detection system after performing repair work on the system.

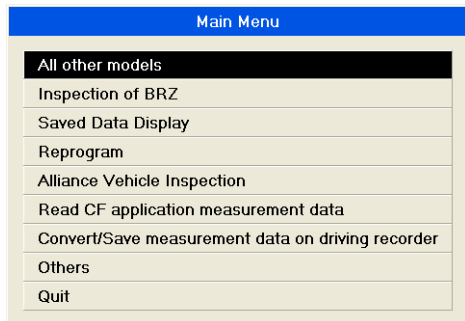
### NOTE:

- Perform occupant detection system calibration work in accordance with the Service Manual.
- The air bag warning lamp will light if some abnormality occurs, such as interruption of the adjustment procedure or interruption of the sensor data read procedure.

### Getting Ready

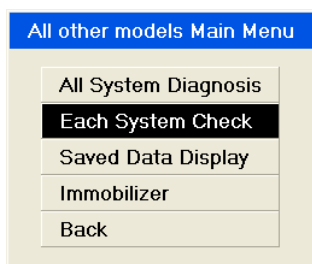
Prepare the vehicle for calibration as instructed by the Service Manual.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



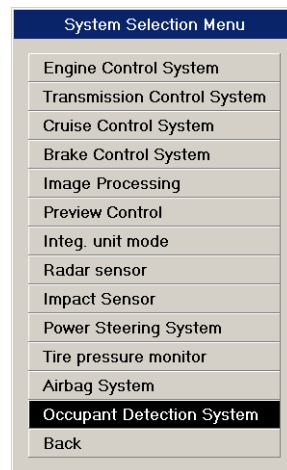
SMU-01294

3. Select [Each System Check] at the item selection screen.



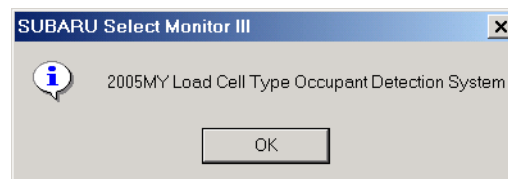
SMU-01296

4. On the System Selection Menu, select [Occupant Detection System] and then press the Enter key or left-click with the mouse.



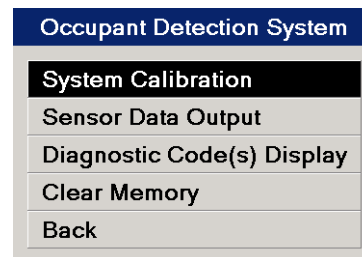
SMU-00679

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00358

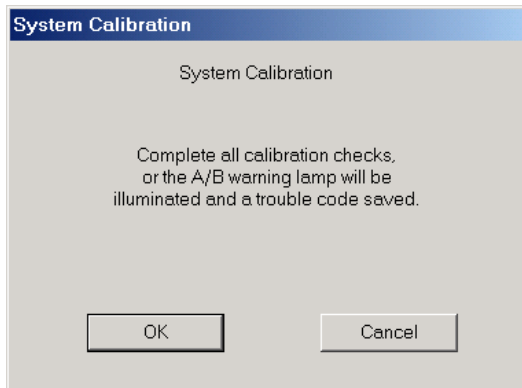
6. On the Occupant Detection System screen, select [System Calibration] and then press the Enter key or left-click with the mouse.



SMU-00359

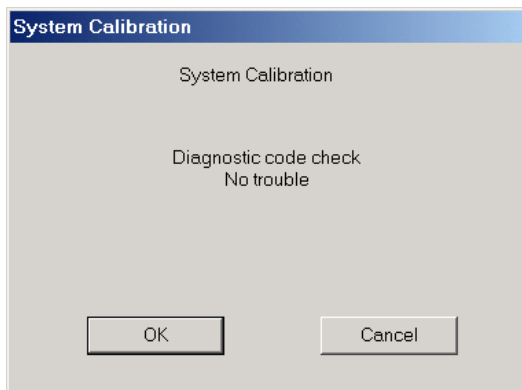


After confirming the contents of the screen shown below, click the [OK] button.



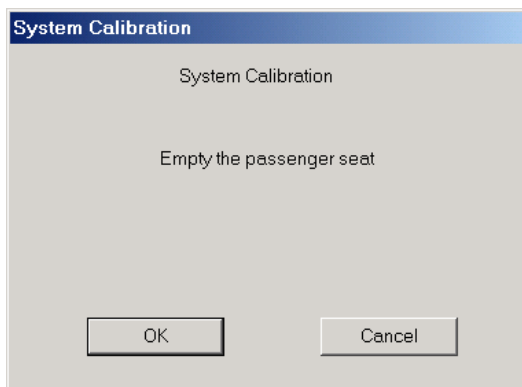
SMU-00360

When a screen appears confirming that there are no fault codes, click the [OK] button.



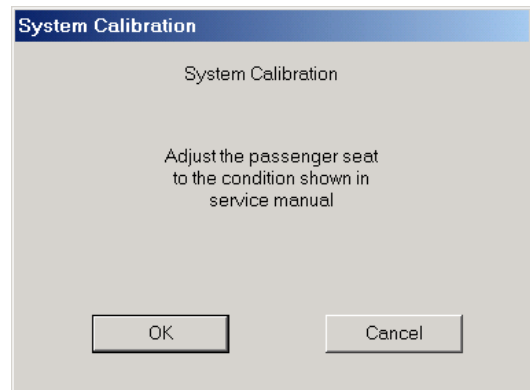
SMU-00361

After making sure the front passenger seat is vacant, click the [OK] button.



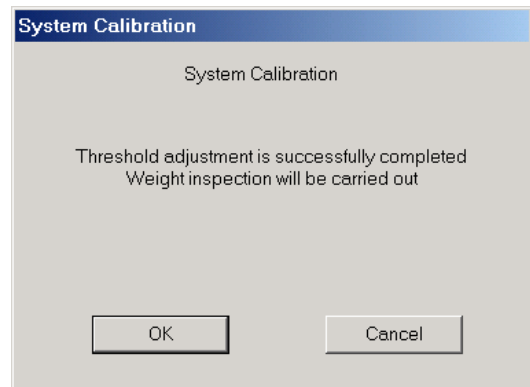
SMU-00362

After making sure the front passenger seat is in the condition specified by the Service Manual, click the [OK] button.



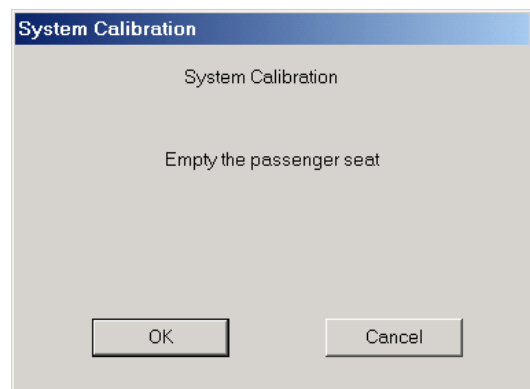
SMU-00363

A load test confirmation screen appears after threshold adjustment ends normally. Click the [OK] button.



SMU-00364

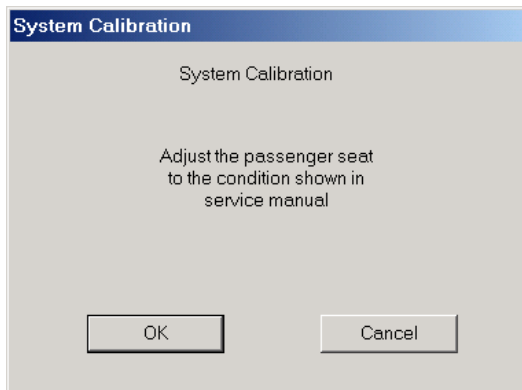
After making sure the front passenger seat is vacant, click the [OK] button.



SMU-00365

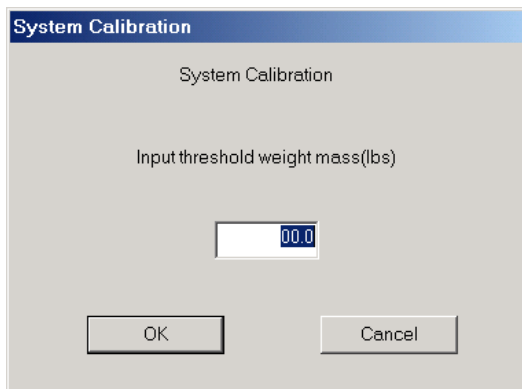


After making sure the front passenger seat is in the condition specified by the Service Manual, click the [OK] button.



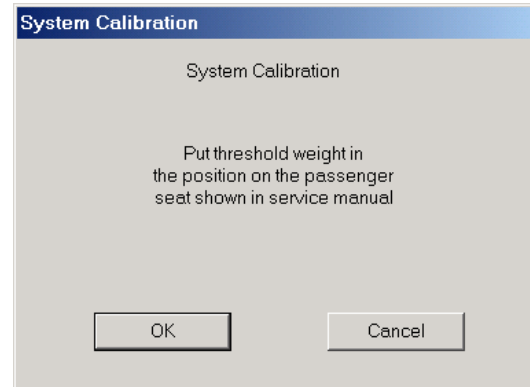
SMU-00366

Input the weight value, and then click the [OK] button.



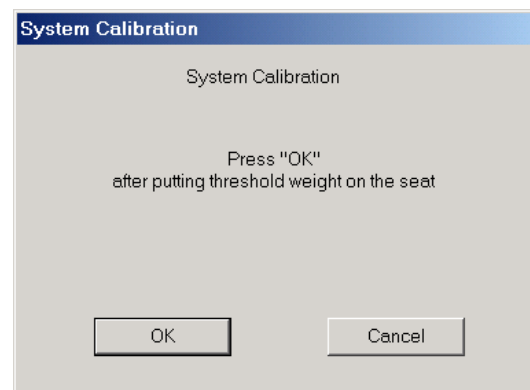
SMU-00367

After confirming that the weight on the front passenger seat is positioned as specified in the Service Manual, click the [OK] button.



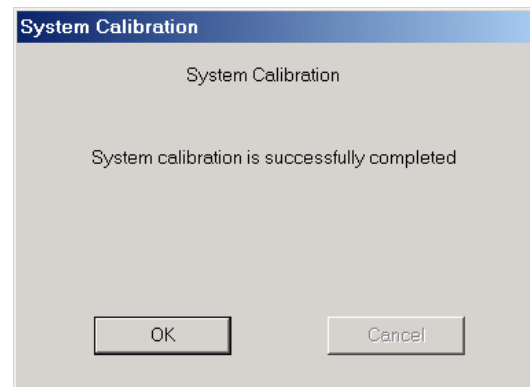
SMU-00368

After confirming that special tool Weight A and Weight B are combined and positioned on the front passenger seat as specified in the Service Manual, click the [OK] button.



SMU-00369

After confirming that system adjustment has ended normally, click the [OK] button to exit the operation.

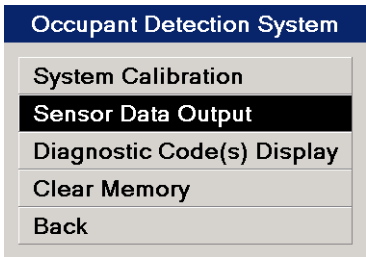


SMU-00370



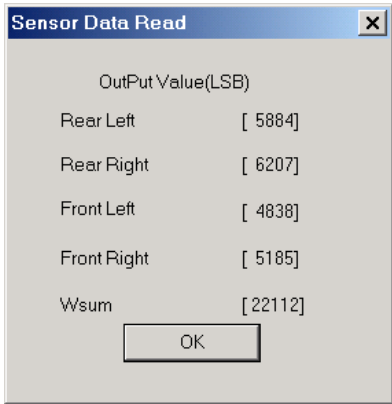
Reading Sensor Data

Data from each sensor can be viewed by selecting [Sensor Data Output] on the Occupant Detection System screen.



SMU-00371

Sensor Data Output Screen



SMU-00372

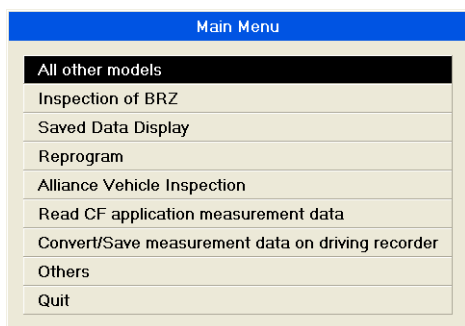


## Rezero the Occupant Detection System

This section describes functions related to Occupant Detection System.

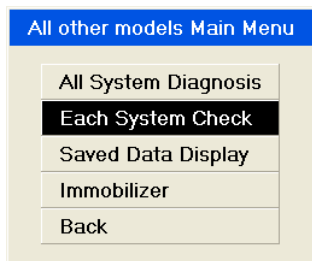
### Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



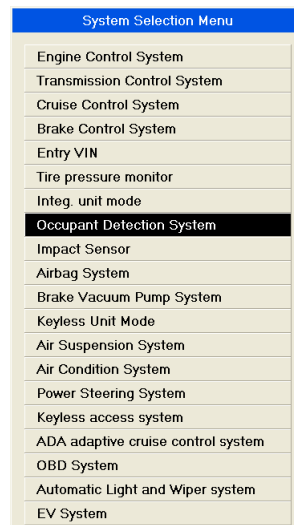
SMU-01294

3. Select [Each System Check] at the item selection screen.



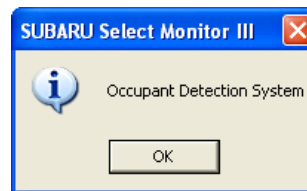
SMU-01296

4. Select [Occupant Detection System] at the System Selection menu.



SMU-01553

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.

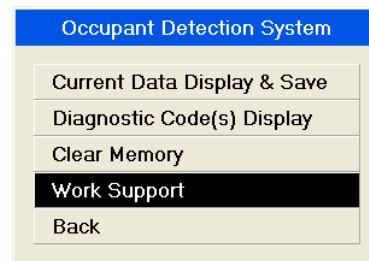


SMU-01554

### Rezero

To Rezero of the occupant detection sensor.

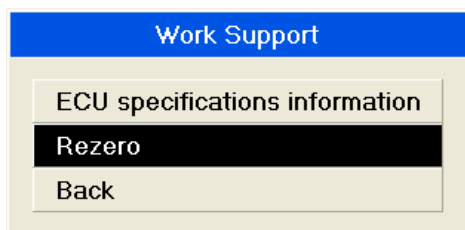
1. Select [Work Support] at the item selection screen.



SMU-01555



2. Select [Rezero] at the item selection screen.

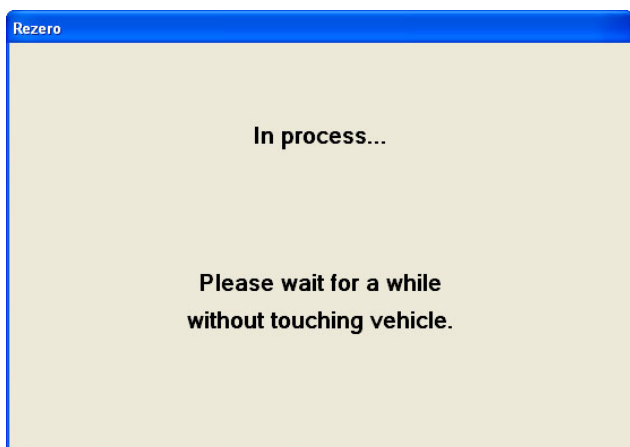


SMU-01556

3. Subsequent steps, follow the instructions on the screen.

4. Start Rezero.

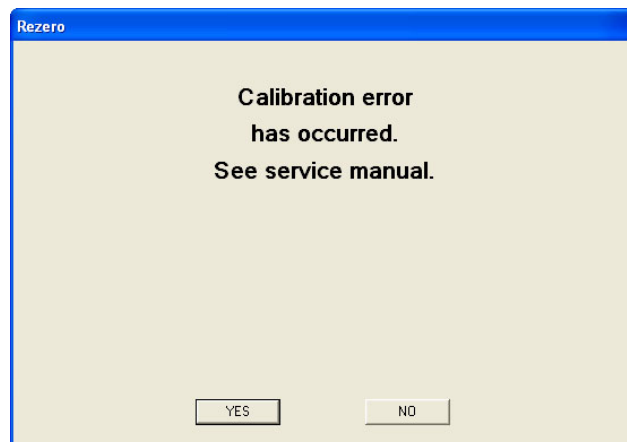
Wait for a while until it is completed.



SMU-01557

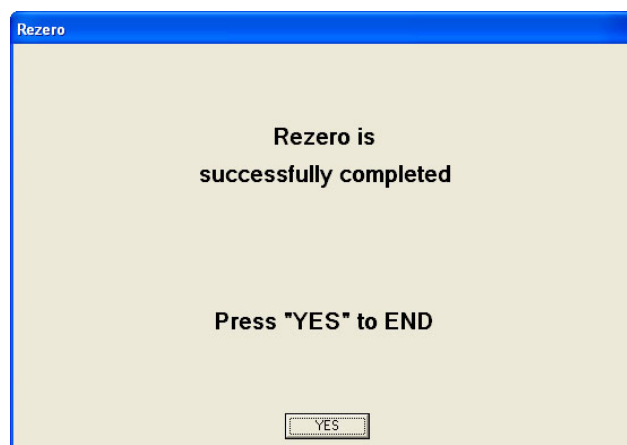
#### NOTE:

If the calibration fails, display the following message. When click "YES", start Rezero, but in this case, as well as Rezero completed successfully, please try again.



SMU-01558

5. The screen shown below will appear if Rezero ends normally. Click the [YES] button.

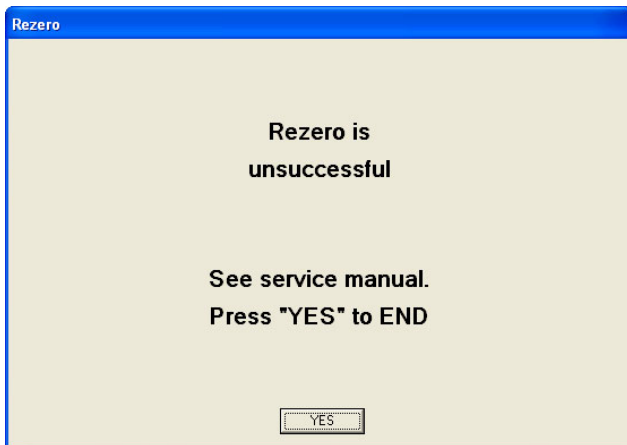


SMU-01559



**NOTE:**

If fails Rezero, display the following message.  
Click [YES] to undo the entry.



SMU-01560



## Airbag System

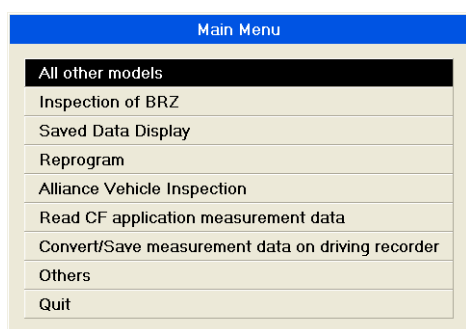
This function can be used to check the operational status of each sensor when abnormality of seat belt buckle switch and seat position sensor occurs, or after replacing the seat belt buckle switch and the seat position sensor.

### NOTE:

Status data screen will appear in North American models only.

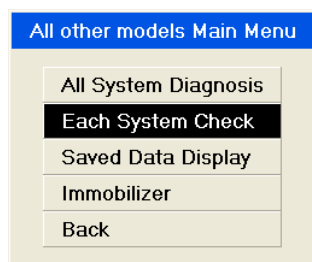
### Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



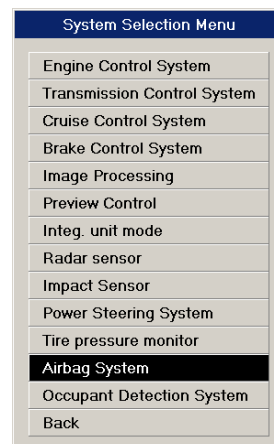
SMU-01294

3. Select [Each System Check] at the item selection screen.



SMU-01296

4. On the System Selection Menu, select [Airbag System] and then press the Enter key or left-click with the mouse.



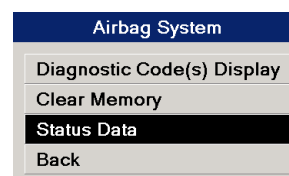
SMU-00682

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



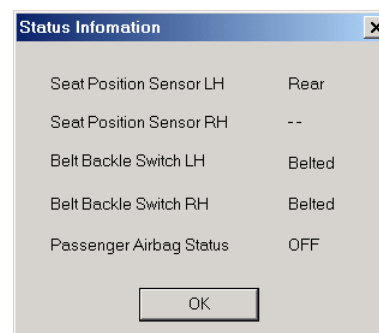
SMU-00374

6. On the Airbag System screen, select [Status Data] and then press the Enter key or left-click with the mouse.



SMU-00375

After checking the status of each sensor, click the [OK] button.



SMU-00376



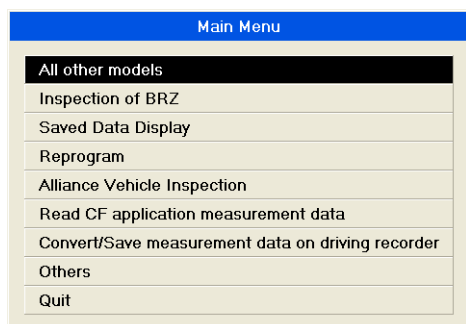
## CAN System Fault Location

When there is some trouble in the CAN system, the location of this trouble can be confirmed.

### NOTE:

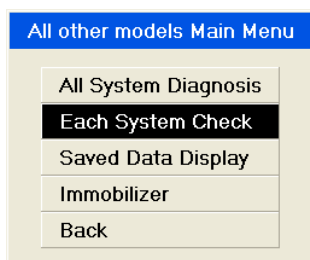
- This function corresponds only to troubles memorized DTC. In case of troubles not memorized DTC, their locations are not displayed.
- The DTC displayed by the “Diagnostic Code Display” of the CAN system are only the codes related to the CAN system out of the group of DTCs displayed by “Diagnostic Code Display” of the Body Integrated Module. Accordingly, the DTC displayed by the CAN system also can be confirmed from the Body Integrated Module.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



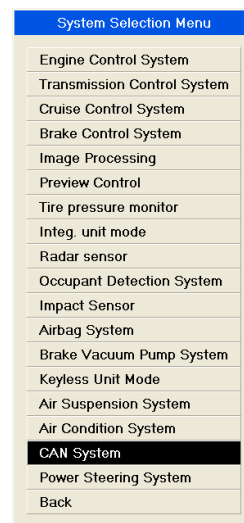
SMU-01294

3. Select [Each System Check] at the item selection screen.



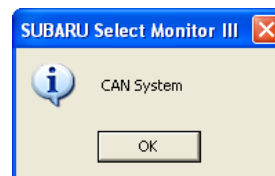
SMU-01296

4. On the System Selection Menu, select [CAN System] and then press the Enter key or left-click with the mouse.



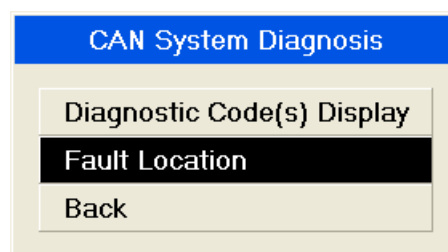
SMU-00892

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00893

6. From the list of fault diagnosis items, select [Fault Location] and then press the Enter key or left-click with the mouse.



SMU-00894

7. The fault location is displayed.

File View Tool Help	
F1 F2 Clear F3 F4 F5 F6 F7 F8 Print F9	
No.	Description & trouble position
1	Comm. Line Failure (ECM/VDC/ABS to Unit) or Integ. Unit Failure
2	Comm. Line Failure (ECM to Integ. Unit) or ECM Failure
3	Comm. Line Failure (VDC/ABS to Integ. Unit) or VDC/ABS Failure

SMU-00895



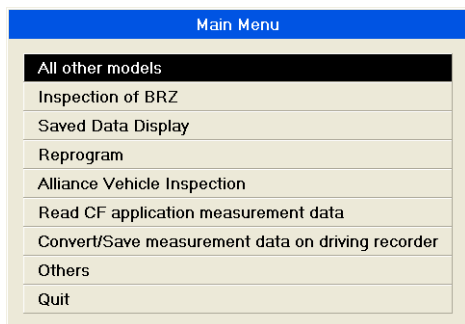
## Registering the Immobilizer (Not Equipped with Keyless Access with Push Button Start System)

### WARNING:

- The security ID and registration command must be handled as confidential information and shall not be announced to outsiders.
- When wireless radios or car telephones are installed, they must be installed so that the immobilizer system is not influenced by electric waves.
- Do not operate cell phones or wireless radios or the like when either trouble diagnosis or immobilizer registration is in progress.
- During immobilizer registration, do not bring a key with a different ID close to the ignition switch. When the key is on a keychain, remove it from the chain before start of diagnosis. When there are several keys on one keychain, remove them from the keychain and use them individually for the work.
- When the engine cannot be started with a registered key, pull the ignition key from the ignition switch, wait approximately one second until the immobilizer warning lamp starts flashing, and then turn the ignition key slowly to start the engine.

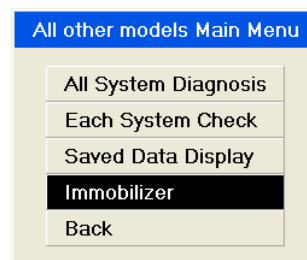
### Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



SMU-01294

3. Select [Immobilizer] at the item selection screen.

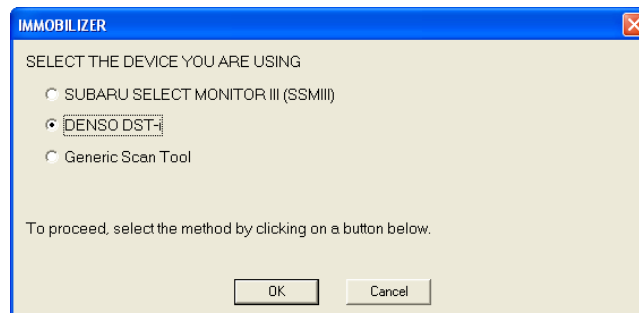


SMU-01297

### NOTE:

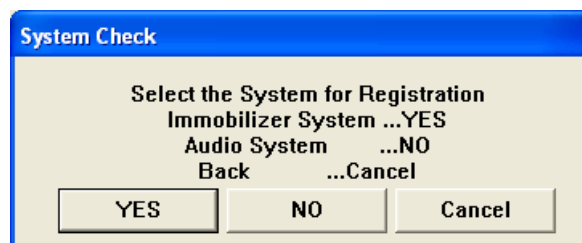
When select [inspection of BRZ] in step 2, after having select [Each System Check], please select [Immobilizer].

4. You set an interface box to use. (As an example, "DENSO DST-i" is selected.)



SMU-01509

5. Click the [YES] button if the system selection screen is displayed.



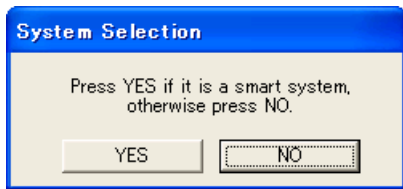
SMU-00946

### NOTE:

Audio System is the specification only for the U.K.



6. On the next screen, confirm the system is keyless access with push button start system. Click the [NO] button.

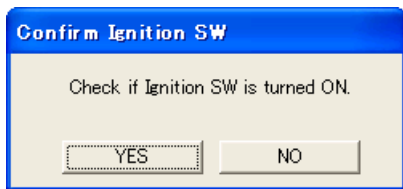


SMU-00908

**NOTE:**

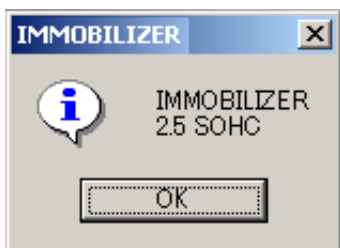
- The term [smart system] that appears on this screen is synonymous with the term [keyless access with push button start system] used in this text.
- The keyless access with push button start system is not equipped with some vehicles, depending on the specifications, for North America, Australia, and some other areas.

7. Click [YES] after confirming if the ignition switch is ON, as following screen will be displayed.



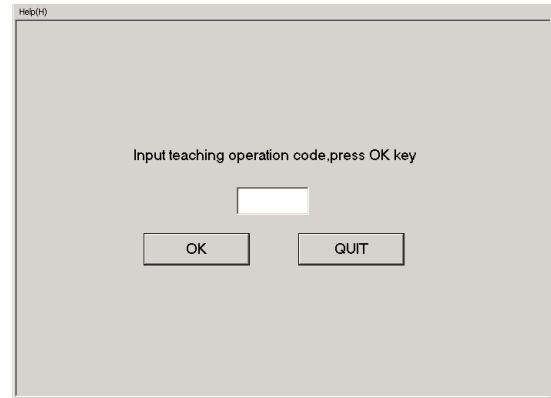
SMU-00909

8. In response to the compliance verification dialog box that appears, click the [OK] button.



SMU-00876

9. Input the teaching operation code, and then click the [OK] button.

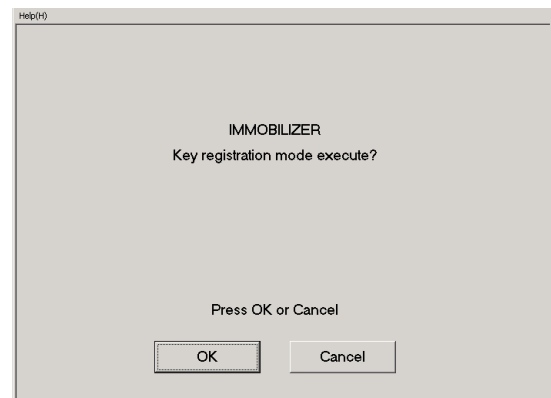


SMU-00431

**NOTE:**

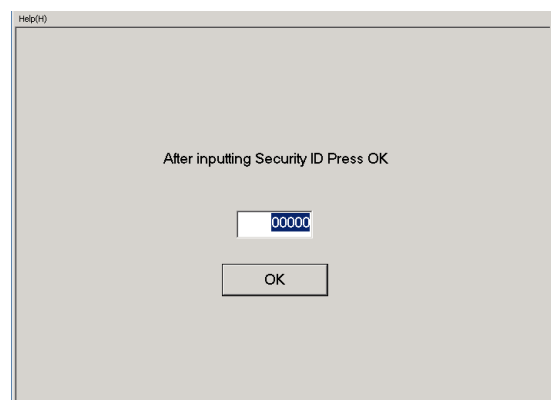
When you wish to return to the Main Menu screen, click the [QUIT] button.

10. On the registration mode confirmation dialog box that appears, click the [OK] button.



SMU-00432

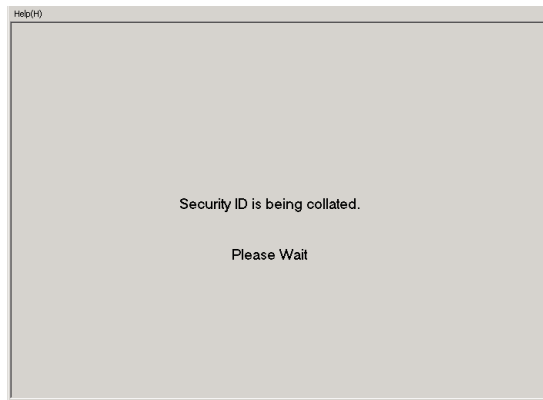
11. Input the security ID and then click the [OK] button.



SMU-00732

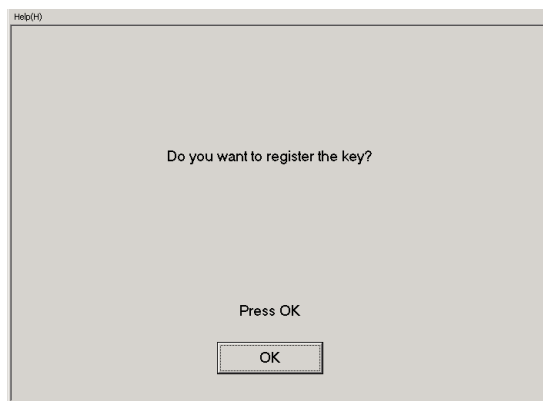


12. Stand by as the security ID is being collated.



SMU-00434

13. In response to the key registration confirmation screen dialog box that appears, click the [OK] button.



SMU-00439

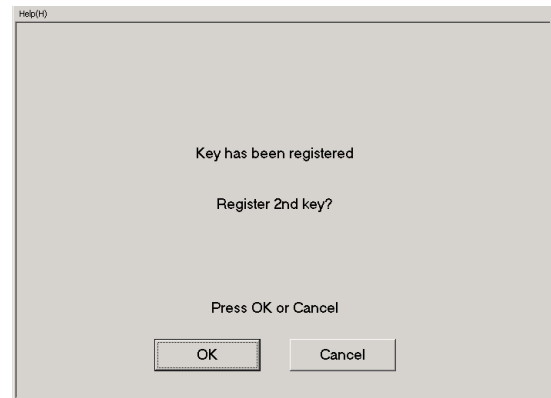
14. Stand by as the key is registered.



SMU-00435

15. The screen shown below will appear if registration ends normally.

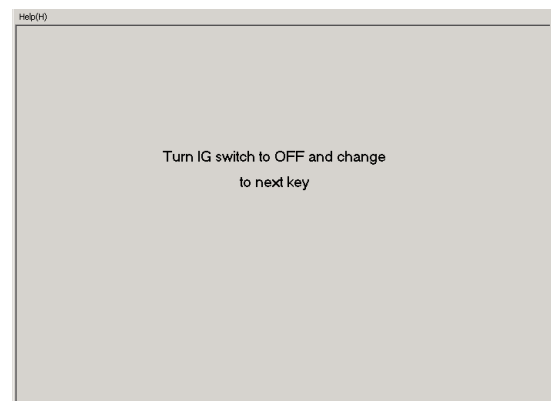
If you have another key to be registered, click the [OK] button. If you do not have any more keys to be registered, click the [Cancel] button and advance to step 26.



SMU-00436

16. Turn off the ignition switch, and then change the key to one to be registered.

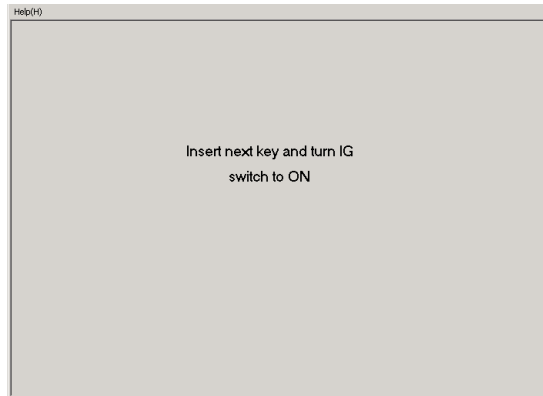
**NOTE:**  
You need to change key within about 30 seconds.



SMU-00437

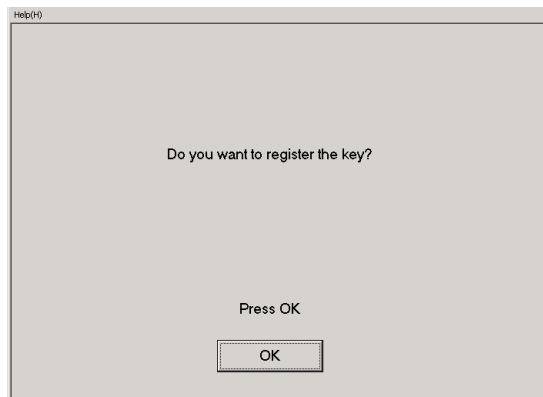


17. Turn off the ignition switch and the screen shown below will appear. Insert the key you want to register into the key cylinder, and turn on the ignition switch.



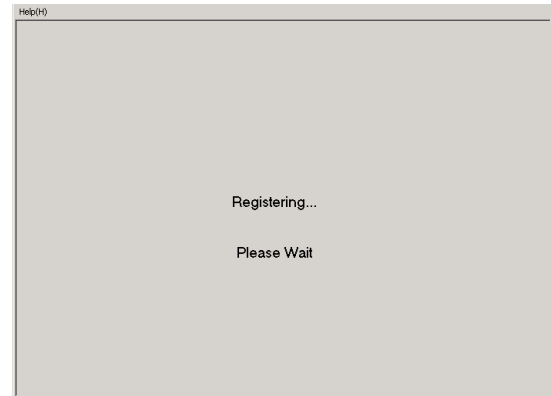
SMU-00438

18. In response to the key registration confirmation screen dialog box that appears, click the [OK] button.



SMU-00439

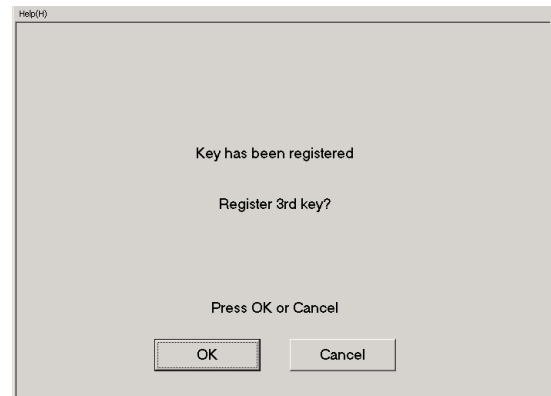
19. Stand by as the key is registered.



SMU-00435

20. The screen shown below will appear if registration ends normally.

If you have another key to be registered, click the [OK] button. If you do not have any more keys to be registered, click the [Cancel] button and advance to step 26.



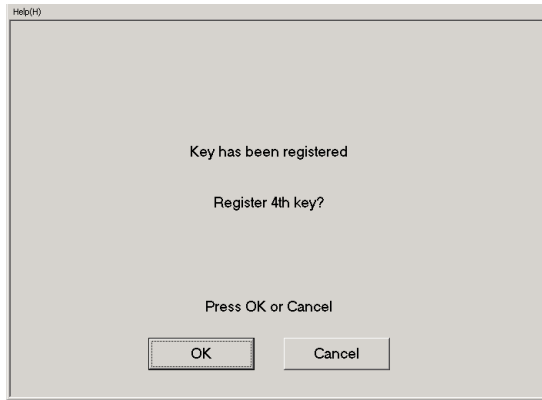
SMU-00440

21. Repeat steps 18 through 21.



22. The screen shown below will appear if registration ends normally.

If you have another key to be registered, click the [OK] button. If you do not have any more keys to be registered, click the [Cancel] button and advance to step 26.



SMU-00441

23. Repeat steps 18 through 21.

24. The screen shown below will appear if registration ends normally.

Click the [OK] button.



SMU-00733

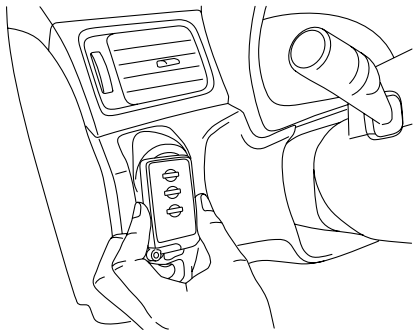
25. After confirming that the immobilizer system is operating normally, quit the registration operation.



# Registering the Immobilizer (Equipped with the Keyless Access with Push Button Start System)

WARNING:

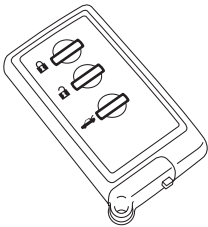
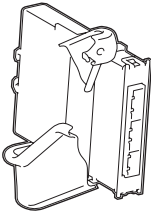
- The security ID and registration command must be handled as confidential information and shall not be announced to outsiders.
- When you install wireless radios or car phones, make sure that Access Key are not influenced by their electric waves.
- Do not operate cell phones or wireless radios or the like when either trouble diagnosis or Access Key registration is in progress.
- The work of "Registering the Smart Immobilizer", "Registering the Smart control module" and "Delete the Access Key ID" includes the operation of holding up the Access Key to the push engine switch (push-button ignition switch). Pay attention to the following when performing this operation.
  - 1) Confirm that the battery voltage is 11 V or more and execute each mode.
  - 2) When confirm/register Access Key, only one key can be brought into vehicle at a time.  
For registration of multiple keys, bring a key into vehicle and perform registration while leaving rest of other keys outside.
  - 3) When holding up the Access Key to the push engine switch (push-button ignition switch), do not hold two or more Access Key at the same time, but use only one each time. (When the Access Key is on a keychain, remove it from the keychain before the work.)
  - 4) When holding the Access Key up to the push engine switch (push-button ignition switch), bring the Access Key close to the push engine switch (push-button ignition switch) as shown below.



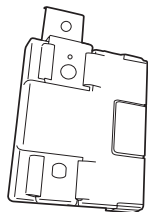
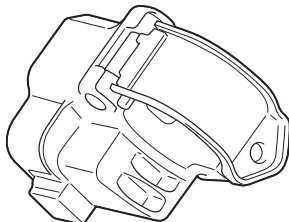
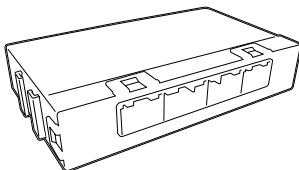
SMU-01094

- (1) Let the mechanical key insertion opening of the Access Key face down.
- (2) Hold the Subaru ornament side to the push engine switch (push-button ignition switch) side.
- (3) Bring it close until it touches the push engine switch (push-button ignition switch).

When replacing the parts for vehicles with keyless access with push button start system, always use new parts for "Access Key", "collation control module", "ID code box", "steering lock control module", and "body integrated module", and never replace by used parts. When a second-hand part is used to repair, inside of each part used in the system may be damaged.

The part which cannot change for a used part (The following illustration is an example. The shape of each part is different by a vehicle model)	
• Access Key	 SMU-01248
• Collation control module	 SMU-01249



The part which cannot change for a used part (The following illustration is an example. The shape of each part is different by a vehicle model)	
• ID Code Box	 <p>SMU-01250</p>
• Steering Lock control module	 <p>SMU-01251</p>
• Body integrated module	 <p>SMU-01252</p>

- If the engine cannot get started with a registered Access Key, wait approximately one second until the immobilizer warning lamp starts flashing. Then try to start the engine again with the registered Access Key.
- Do not place a PC within 10cm around Access Key and receiver antennas to avoid any malfunctions of the keyless access with push button start system.

#### NOTE:

- The keyless access with push button start system is not equipped with some vehicles, depending on the specifications, for North America, Australia, and some other areas.
- Carry out the "Registering the Smart Immobilizer" procedure in case you replace a Access Key, collation control module, body integrated module or a combination meter.

- In case of replacing a steering lock control module, execute the "Registering the Smart control module" procedure.
- When replacing the ID code box, "Registering the Smart control module" and "Registering the Engine control module" must be performed in this order.
- In case of replacing an engine control module, execute the "Registering the Engine control module" procedure.
- Immobilizer registration is NOT necessary when a power supply control module or a gateway control module is replaced.
- When turning the ignition on, press the push engine switch (push-button ignition switch) twice without stepping on the brake pedal. Power supply status changes to ACC-ON, IG-ON, OFF, ACC-ON accordingly, as pressing the push engine switch (push-button ignition switch) once.
- At the time of engine start, press the push engine switch (push-button ignition switch) once with the brake pedal depressed in case of an AT vehicle. In case of an MT vehicle, press the push engine switch (push-button ignition switch) once with the clutch pedal depressed.
- When performing either one of the operations shown below, perform also the "registration of the remote control engine starter".
  - 1) Installing remote control engine starter
  - 2) Replacing remote control engine starter
  - 3) Replacing collation control module of a vehicle equipped with remote control engine starter
- At the time of replacement of the body integrated module and the combination meter, perform "Registering the Smart Immobilizer".
- When a Access Key has been lost, perform "Delete the Access Key ID".  
When all Access Key have been lost, refer to "Keyless access with push button start system: Correspondence table at the time of parts failure".
- There is a possibility that registry fails due to poor connector coupling of cabin antenna. In such case, please repair electrical contacts of keyless access indoor antenna (front) before performing immobilizer registry. Keyless access indoor antenna (front) is the only antenna used in immobilizer registry.



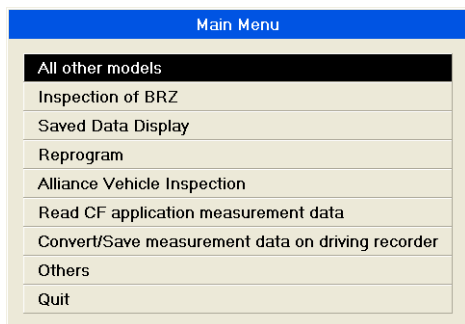
## Registering the Smart Immobilizer

You can get the immobilizer registered for vehicles equipped with keyless access with push button start system.

### NOTE:

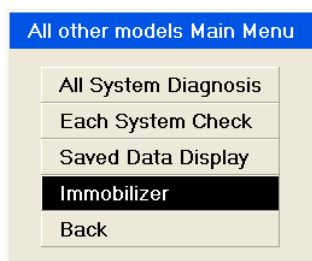
- Please refer to the "REGISTRATION MANUAL FOR IMMOBILIZER" for the 2012 and later MY vehicles without a security tag.
- The following procedure is a case at the time of the additional registration with the Access Key. The Indication screens and the frequency of buzzer vary according to the additional parts or replacement parts. In that case, please work according to the instructions of the indication screen.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



SMU-01294

3. Select [Immobilizer] at the item selection screen.

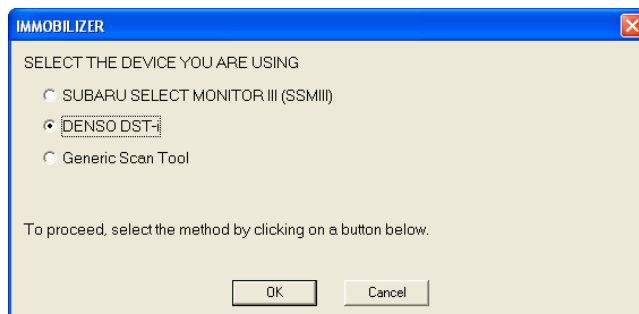


SMU-01297

### NOTE:

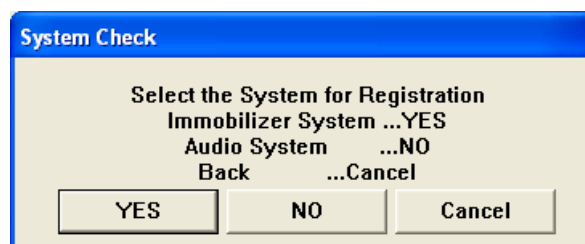
When select [Inspection of BRZ] in step 2, after having select [Each System Check], please select [Immobilizer].

4. You set an interface box to use. (As an example, "DENSO DST-i" is selected.)



SMU-01509

5. Click the [YES] button if the system selection screen is displayed.

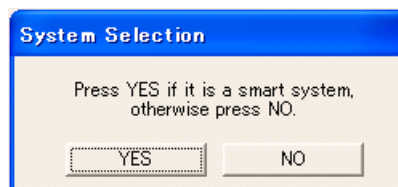


SMU-00946

### NOTE:

Audio System is the specification only for the U.K.

6. On the next screen, confirm the system is keyless access with push button start system. Click the [YES] button.



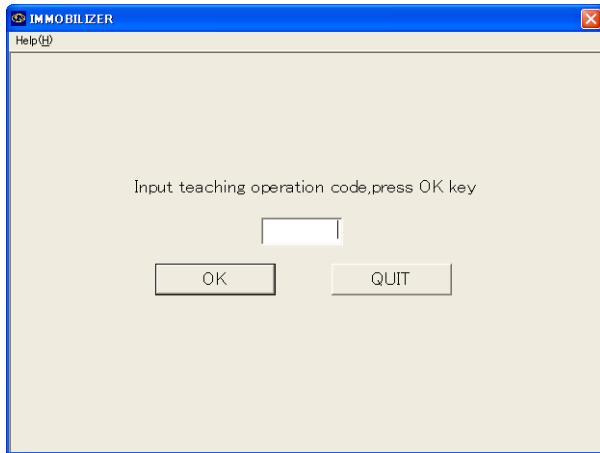
SMU-00910

### NOTE:

The term [smart system] that appears on this screen is synonymous with the term [keyless access with push button start system] used in this text.



7. Input the teaching operation code, and then click the [OK] button.

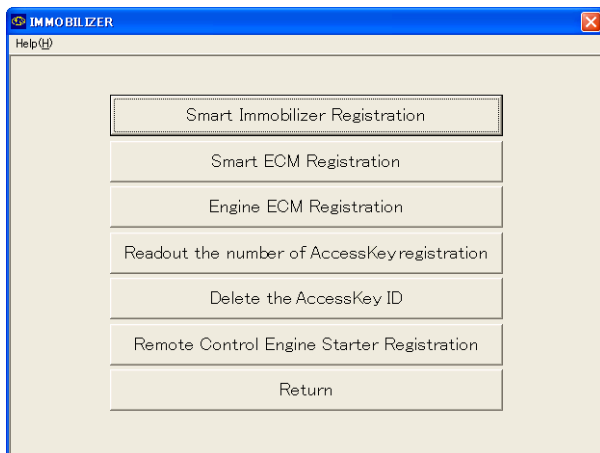


SMU-00911

**NOTE:**

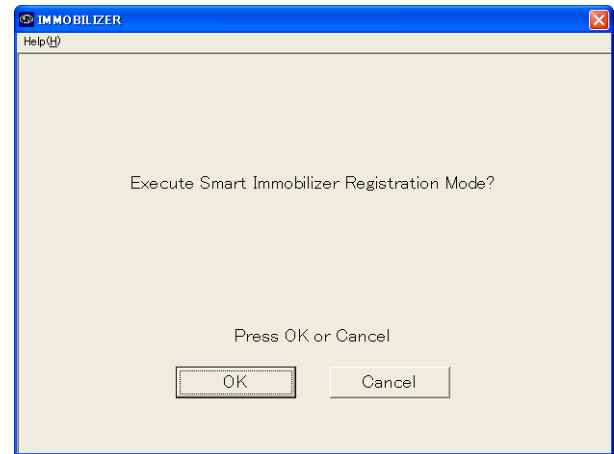
When you wish to return to the Main Menu screen, click the [QUIT] button.

8. The registration mode selection dialog box appears. Click the [Smart Immobilizer Registration] button.



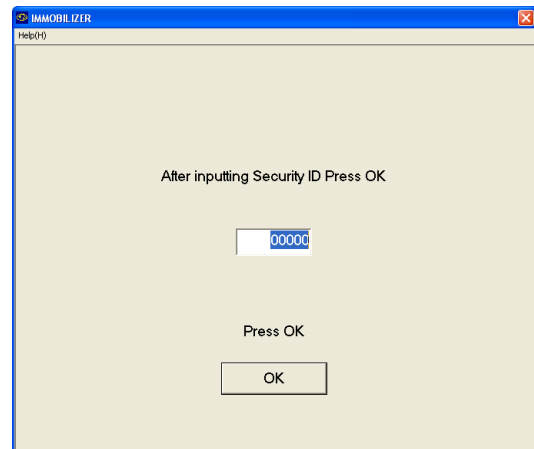
SMU-01332

9. On the registration mode confirmation dialog box that appears, click the [OK] button.



SMU-00913

10. Input the security ID and then click the [OK] button.



SMU-00914

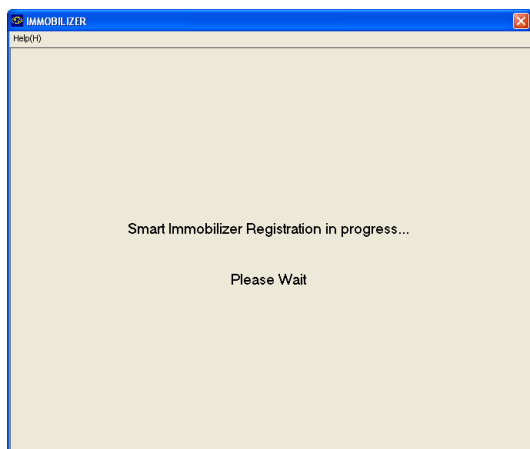
11. Stand by as the security ID is being collated.



SMU-00915



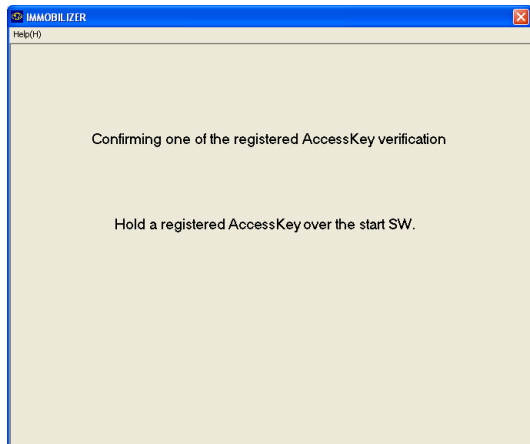
12.Wait until the smart immobilizer is then being registered.



SMU-00916

13.The dialog box to confirm already registered Access Key appears. Hold one of those Access Key over the push engine switch (push-button ignition switch).

After the buzzer sounds once, move the Access Key away from the push engine switch (push-button ignition switch) and go to the next step.



SMU-01333

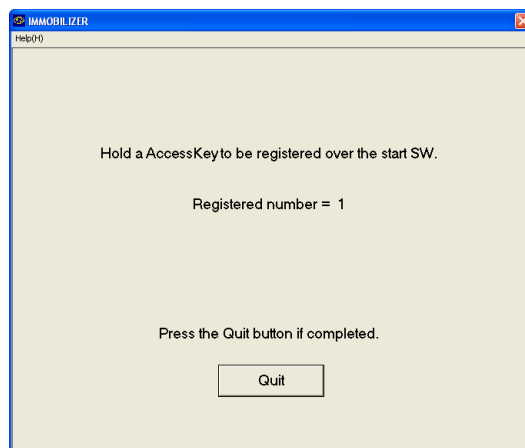
#### NOTE:

- When holding the Access Key up to the push engine switch (push-button ignition switch), bring the Access Key close to the push engine switch (push-button ignition switch) as shown below.
  - 1) Let the mechanical key insertion opening of the Access Key face down.
  - 2) Hold the Subaru ornament side to the push engine switch (push-button ignition switch) side.

3) Bring it close until it touches the push engine switch (push-button ignition switch).

- The procedure to hold a Access Key over the push engine switch (push-button ignition switch) has to be done within 30 seconds after the screen above appears.

14.When screen displays Access Key registration mode shown below, hold one Access Key you wish to register additionally over the push engine switch (push-button ignition switch).



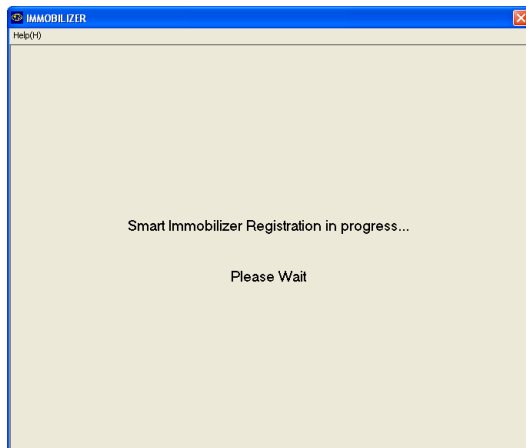
SMU-01334

#### NOTE:

- When the buzzer has sounded twice, the work of holding the Access Key up has been completed, but for 10 seconds after the work, the Access Key should be kept inside the vehicle (near the select lever).
- For registration of the next Access Key, the previously registered Access Key should be removed from the vehicle.
- Do not click the [Quit] button until you finish registering all the Access Key you wish to register.
- When you hold a Access Key over the push engine switch (push-button ignition switch), do so with 30 seconds after above screen is shown.



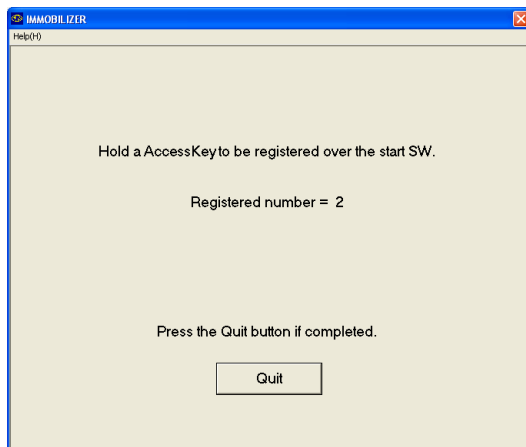
15. Stand by as the Access Key is being registered.



SMU-00916

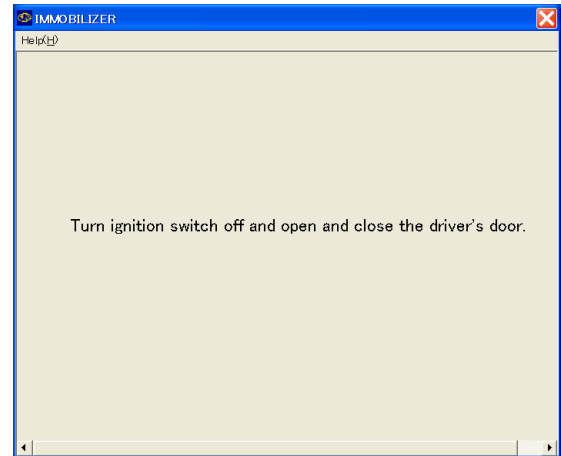
16. Once the registration ends normally, the [Registered number] increases by one as you can see on the screen below.

If you have another Access Key to be registered, repeat steps 12 through 13. If you do not have any more Access Key to be registered, click the [Quit] button and move on to step 15.



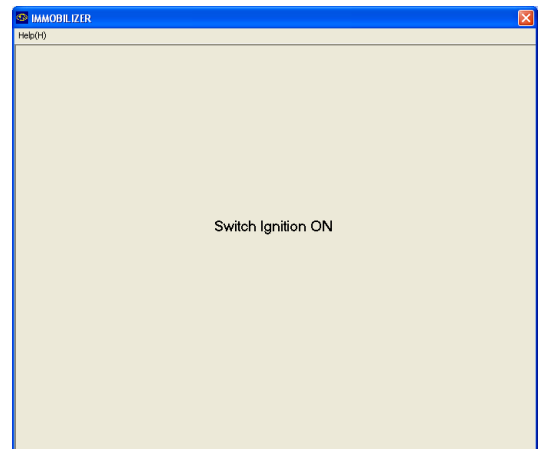
SMU-01335

17. Once following screen appears, turn the push engine switch (push-button ignition switch) off. Then open or close the driver's door, depending on its status.



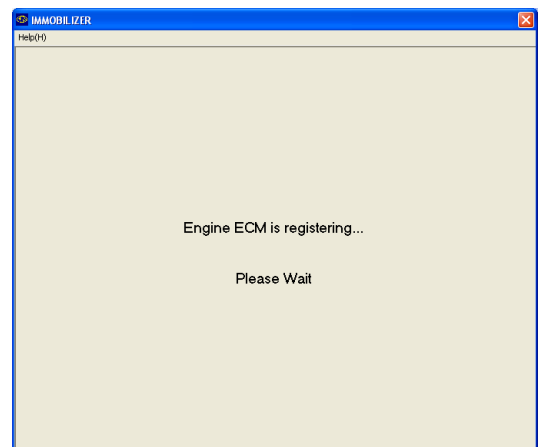
SMU-01121

18. Then following screen appears. Turn the ignition on.



SMU-00921

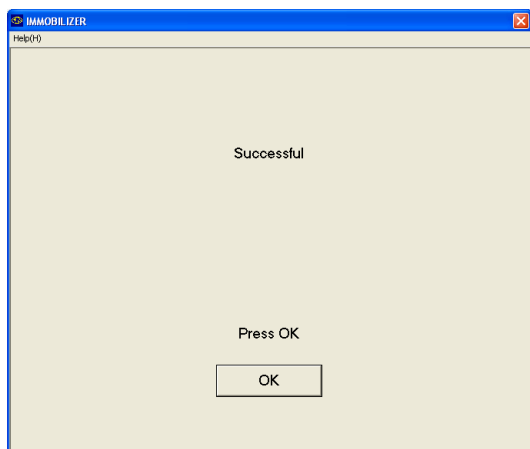
19. Stand by as the registration to the engine control module is being completed.



SMU-00922



20. The screen shown below will appear if registration ends normally. Click the [OK] button.



SMU-00923

21. After confirming that the keyless access with push button start system operates normally, quit the registration operation.

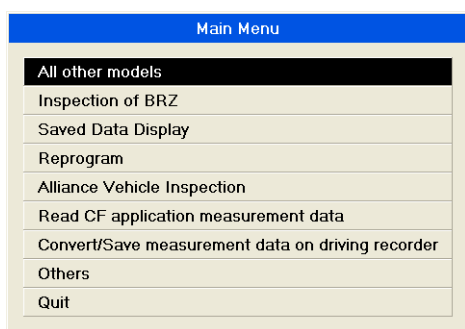
## Registering the Smart Control Module

You can get smart-related control module registered in the keyless access with push button start system.

### NOTE:

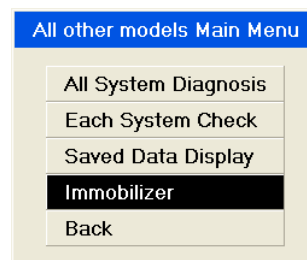
Please refer to the "REGISTRATION MANUAL FOR IMMOBILIZER" for the 2012 and later MY vehicles without a security tag.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



SMU-01294

3. Select [Immobilizer] at the item selection screen.

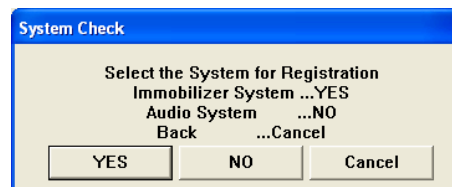


SMU-01297

### NOTE:

When select [Inspection of BRZ] in step 2, after having select [Each System Check], please select [Immobilizer].

4. Click the [YES] button if the system selection screen is displayed.

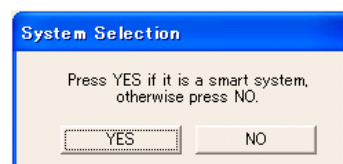


SMU-00946

### NOTE:

Audio System is the specification only for the U.K.

5. On the next screen, confirm the system is keyless access with push button start system. Click the [YES] button.



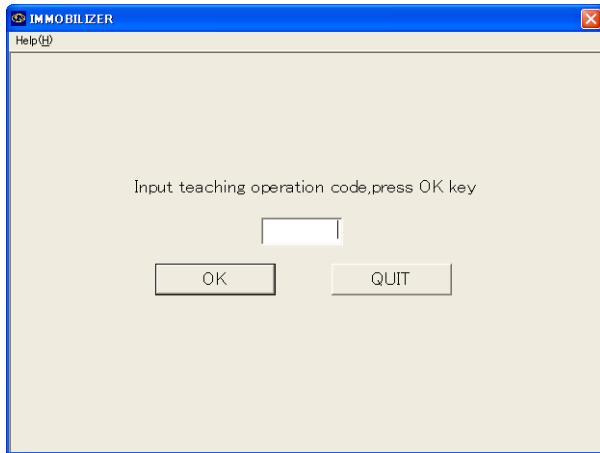
SMU-00910

### NOTE:

The term [smart system] that appears on this screen is synonymous with the term [keyless access with push button start system] used in this text.



6. Input the teaching operation code, and then click the [OK] button.

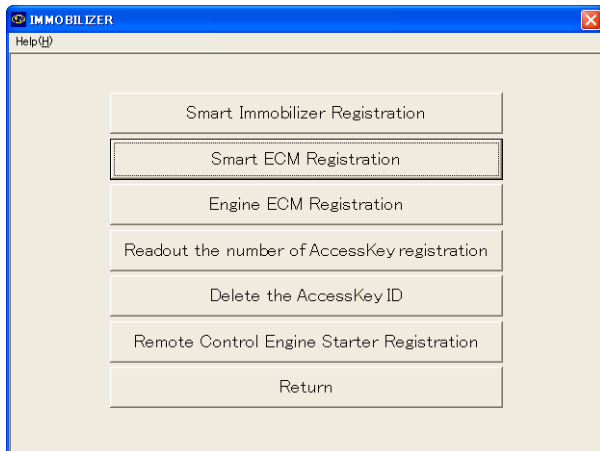


SMU-00911

**NOTE:**

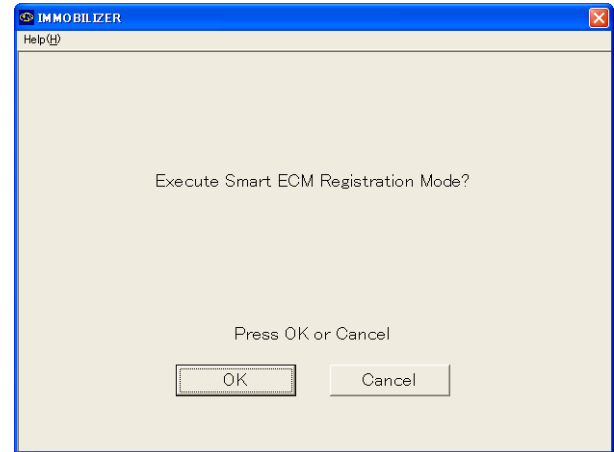
When you wish to return to the Main Menu screen, click the [QUIT] button.

7. The registration mode selection dialog box appears. Click the [Smart ECM Registration] button.



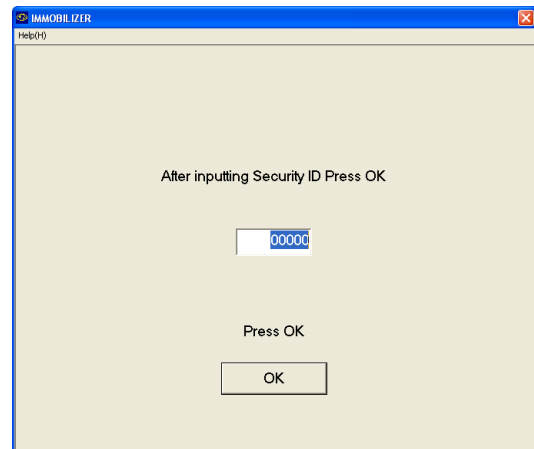
SMU-01336

8. On the registration mode confirmation dialog box that appears, click the [OK] button.



SMU-00925

9. Input the security ID and then click the [OK] button.



SMU-00914

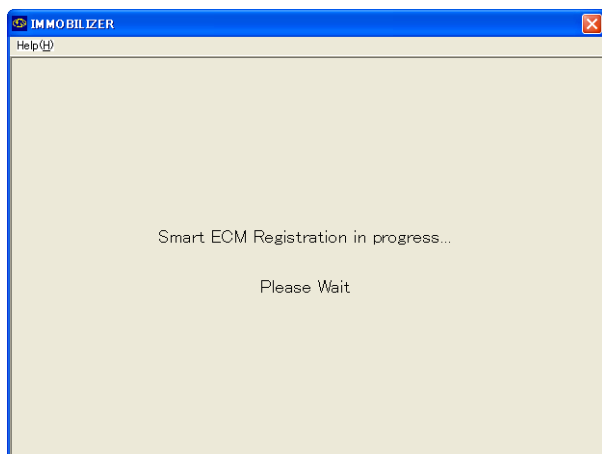
10. Stand by as the security ID is being collated.



SMU-00915



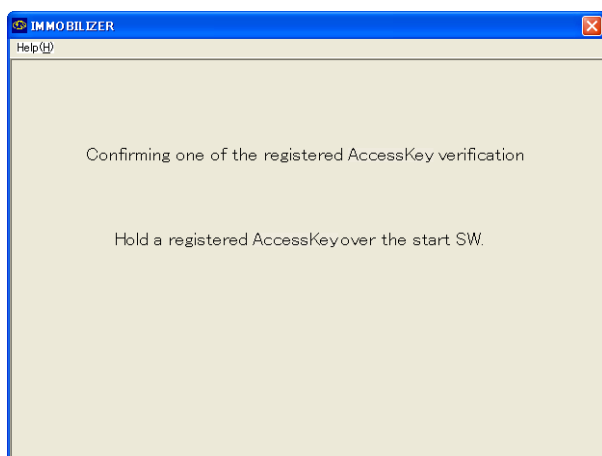
11. Wait until the smart control module is then being registered.



SMU-00926

12. The dialog box to confirm already registered Access Key appears. Hold one of those Access Key over the push engine switch (push-button ignition switch).

After the buzzer sounds once, move the Access Key away from the push engine switch (push-button ignition switch) and go to the next step.



SMU-01337

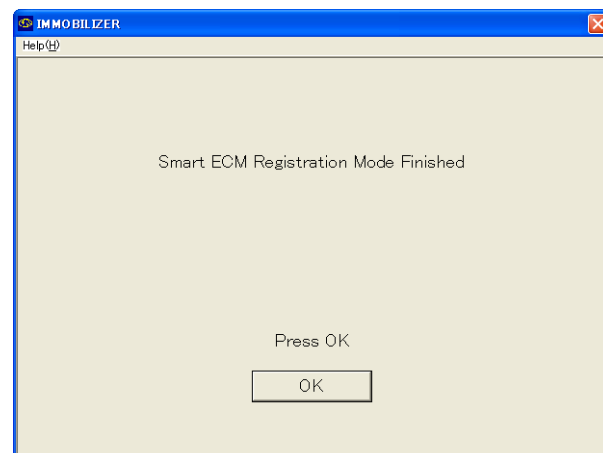
**NOTE:**

- When holding the Access Key up to the push engine switch (push-button ignition switch), bring the Access Key close to the push engine switch (push-button ignition switch) as shown below.
  - 1) Let the mechanical key insertion opening of the Access Key face down.
  - 2) Hold the Subaru ornament side to the push engine switch (push-button ignition switch) side.

3) Bring it close until it touches the push engine switch (push-button ignition switch).

- The procedure to hold a Access Key over the push engine switch (push-button ignition switch) has to be done within 30 seconds after the screen above appears.

13. Smart control module registration is then automatically executed. When the registration ends normally, the following screen appears. Click the [OK] button.



SMU-00928

14. After confirming that the keyless access with push button start system operates normally, quit the registration operation.

## Registering the Engine Control Module

You can get engine control module registered in the keyless access with push button start system.

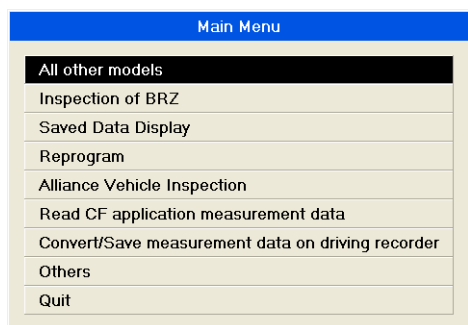
**NOTE:**

Please refer to the "REGISTRATION MANUAL FOR IMMOBILIZER" for the 2012 and later MY vehicles without a security tag.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.

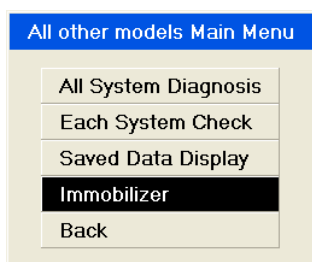


2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



SMU-01294

3. Select [Immobilizer] at the item selection screen.

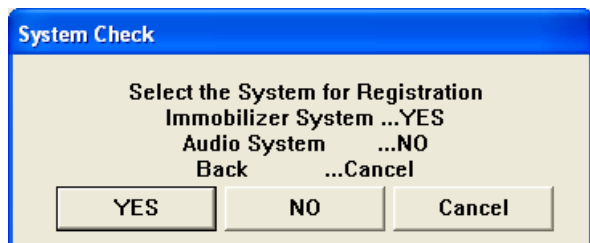


SMU-01297

**NOTE:**

When select [Inspection of BRZ] in step 2, after having select [Each System Check], please select [Immobilizer].

4. Click the [YES] button if the system selection screen is displayed.

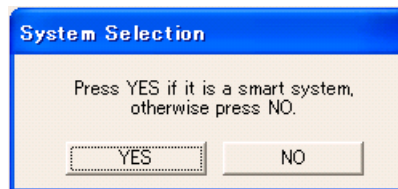


SMU-00946

**NOTE:**

Audio System is the specification only for the U.K.

5. On the next screen, confirm the system is keyless access with push button start system. Click the [YES] button.



SMU-00910

**NOTE:**

The term [smart system] that appears on this screen is synonymous with the term [keyless access with push button start system] used in this text.

6. Input the teaching operation code, and then click the [OK] button.

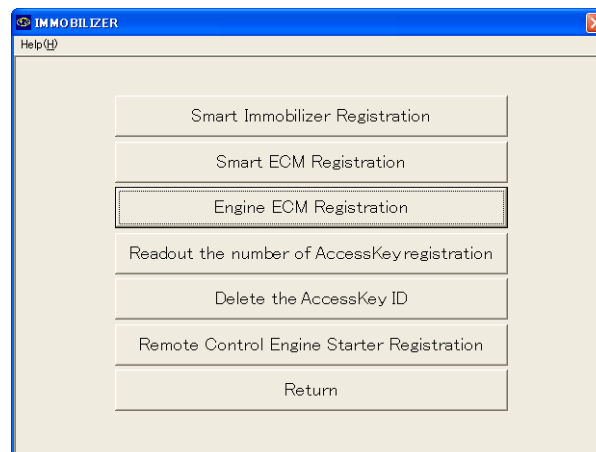


SMU-00911

**NOTE:**

When you wish to return to the Main Menu screen, click the [QUIT] button.

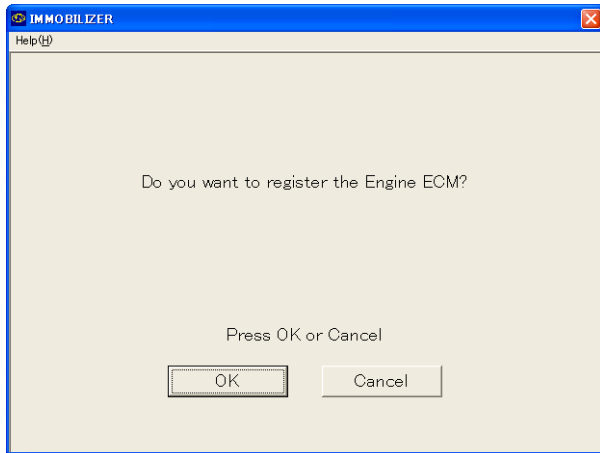
7. The registration mode selection dialog box appears. Click the [Engine ECM Registration] button.



SMU-01338

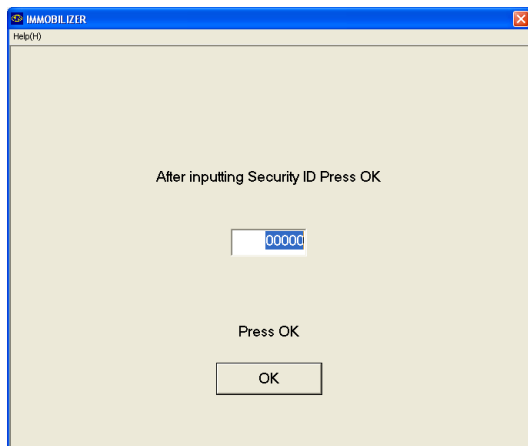


8. On the registration mode confirmation dialog box that appears, click the [OK] button.



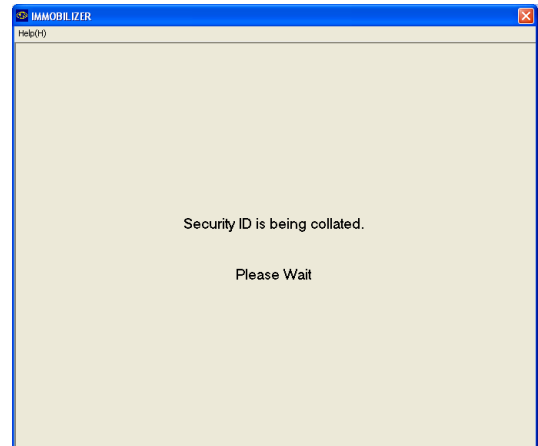
SMU-00930

9. Input the security ID and then click the [OK] button.



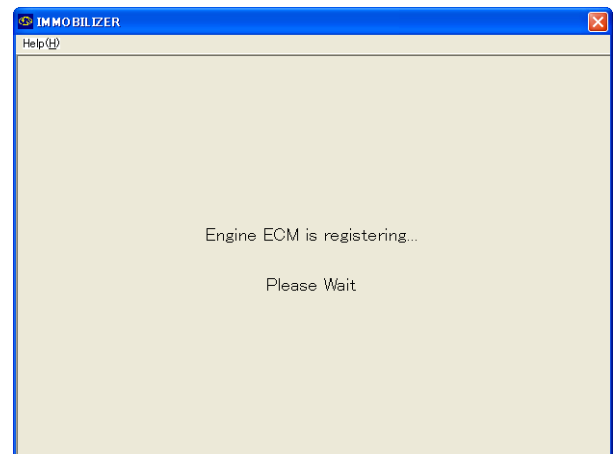
SMU-00914

10. Stand by as the security ID is being collated.



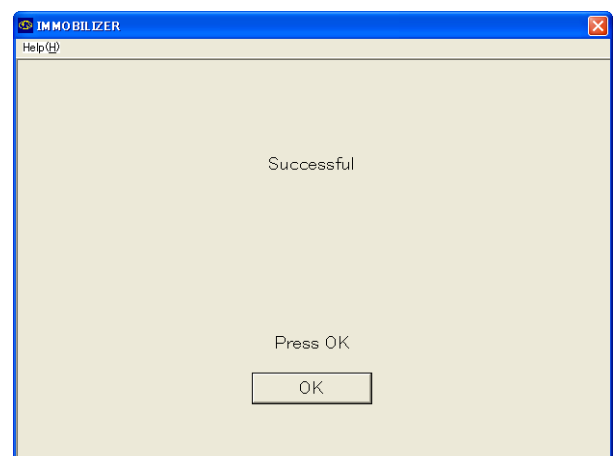
SMU-00915

11. Wait until the engine control module is then being registered.



SMU-00931

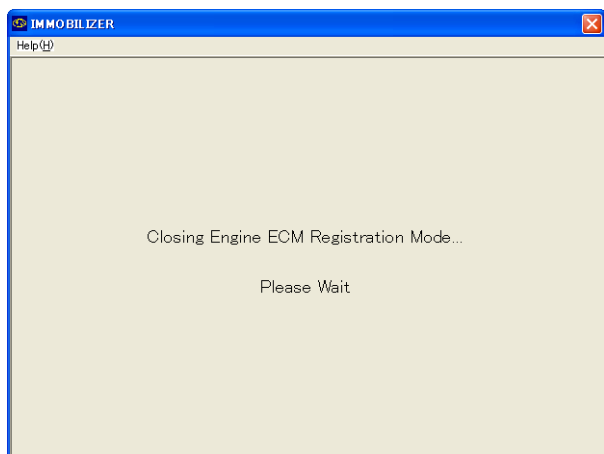
12. The screen shown below will appear if registration ends normally. Click the [OK] button.



SMU-00932



13. After the screen shown below appears, wait until the Main Menu screen shows up again.



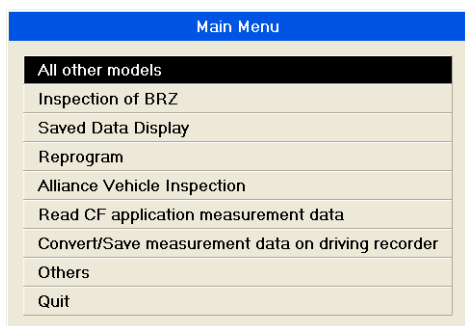
SMU-00933

14. After confirming that the keyless access with push button start system operates normally, quit the registration operation.

## Readout the Number of Access Key Registration

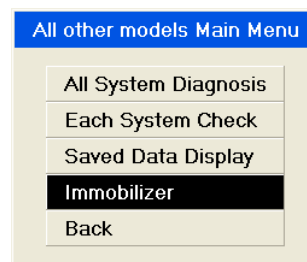
The number of Access Key currently registered on the vehicle can be read.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



SMU-01294

3. Select [Immobilizer] at the item selection screen.



SMU-01297

### NOTE:

When select [Inspection of BRZ] in step 2, after having select [Each System Check], please select [Immobilizer].

4. Click the [YES] button if the system selection screen is displayed.

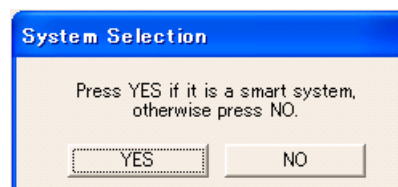


SMU-00946

### NOTE:

Audio System is the specification only for the U.K.

5. On the next screen, confirm the system is keyless access with push button start system. Click the [YES] button.



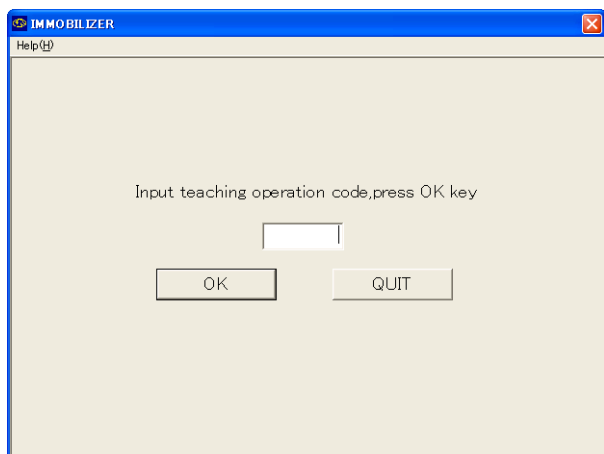
SMU-00910

### NOTE:

The term [smart system] that appears on this screen is synonymous with the term [keyless access with push button start system] used in this text.



6. Input the teaching operation code, and then click the [OK] button.

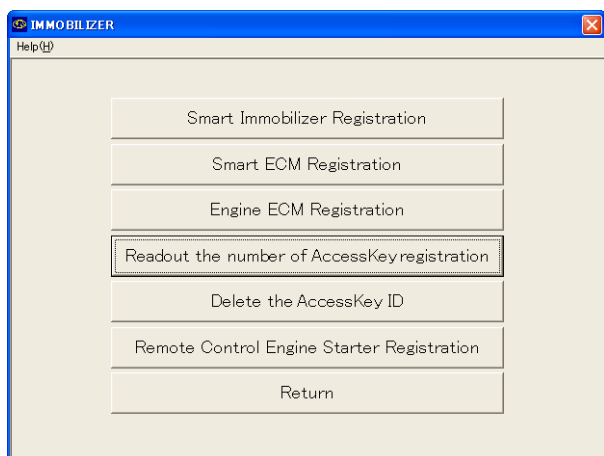


SMU-00911

**NOTE:**

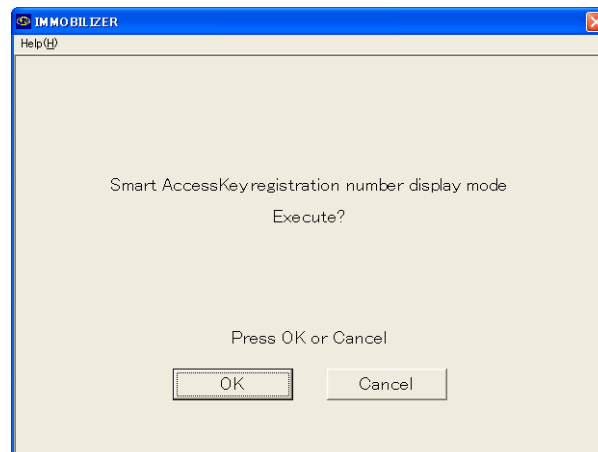
When you wish to return to the Main Menu screen, click the [QUIT] button.

7. The registration mode selection dialog box appears. Click the [Readout the number of Access Key registration] button.



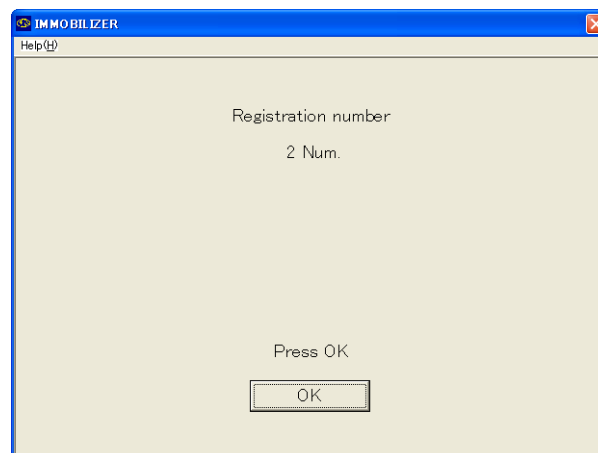
SMU-01339

8. The confirmation dialog box to carry out the registered Access Key number reading mode is shown. Click the [OK] button.



SMU-01340

9. The number of Access Key currently registered will be displayed. After clicking the [OK] button, the screen will return to the main menu.



SMU-00936

## Delete the Access Key ID

Unnecessary Access Key ID registered on the keyless access with push button start system can be deleted. In this procedure, the necessary ID will not be deleted.

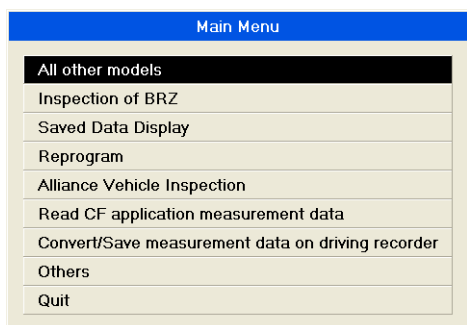
**NOTE:**

You cannot delete all of Access Key ID by this function. The ID of a Access Key placed over the push engine switch (push-button ignition switch) will not be deleted.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.

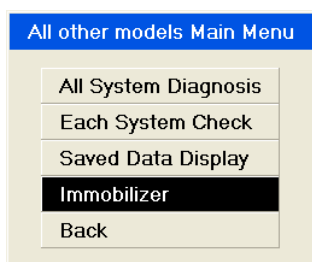


2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



SMU-01294

3. Select [Immobilizer] at the item selection screen.

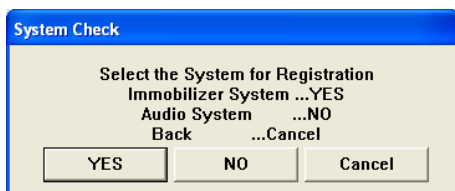


SMU-01297

**NOTE:**

When select [Inspection of BRZ] in step 2, after having select [Each System Check], please select [Immobilizer].

4. Click the [YES] button if the system selection screen is displayed.

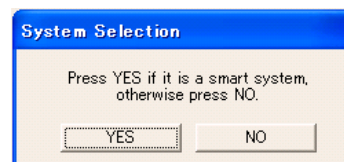


SMU-00946

**NOTE:**

Audio System is the specification only for the U.K.

5. On the next screen, confirm the system is keyless access with push button start system. Click the [YES] button.

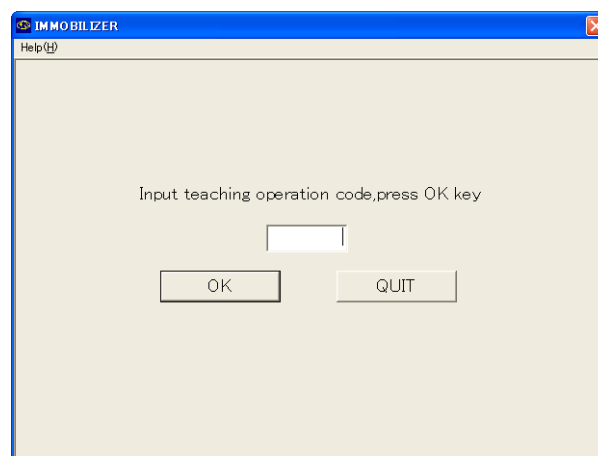


SMU-00910

**NOTE:**

The term [smart system] that appears on this screen is synonymous with the term [keyless access with push button start system] used in this text.

6. Input the teaching operation code, and then click the [OK] button.

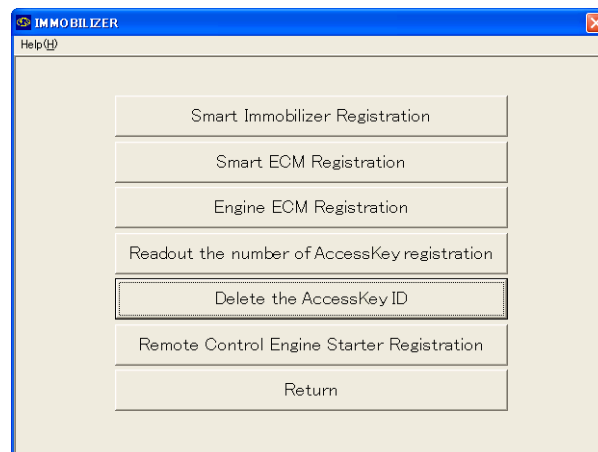


SMU-00911

**NOTE:**

When you wish to return to the Main Menu screen, click the [QUIT] button.

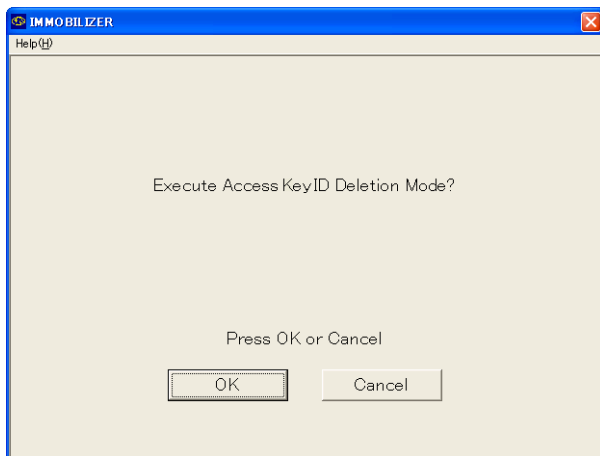
7. The registration mode selection dialog box appears. Click the [Delete the Access Key ID] button.



SMU-01341

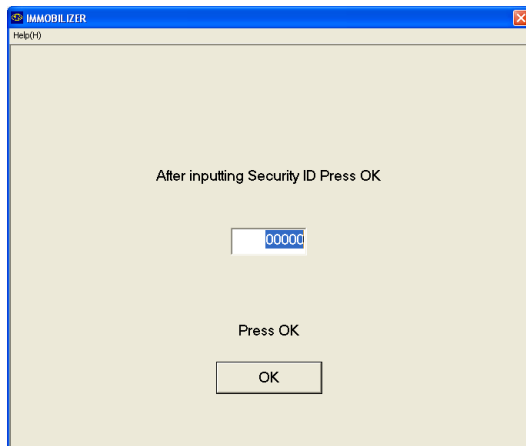


8. The confirmation dialog box to carry out the Access Key ID deletion mode appears. Click the [OK] button.



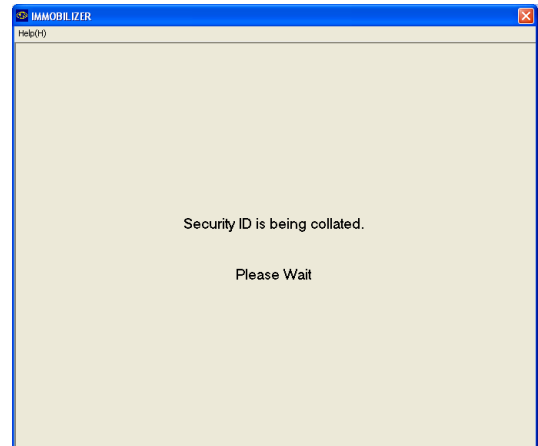
SMU-01342

9. Input the security ID and then click the [OK] button.



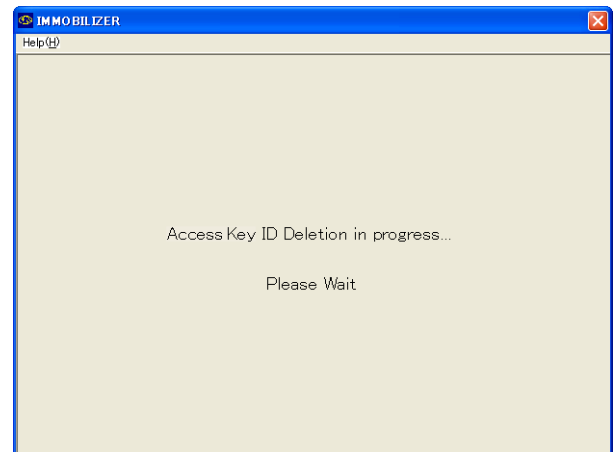
SMU-00914

10. Stand by as the security ID is being collated.



SMU-00915

11. Please wait for deleting registered Access Key ID.

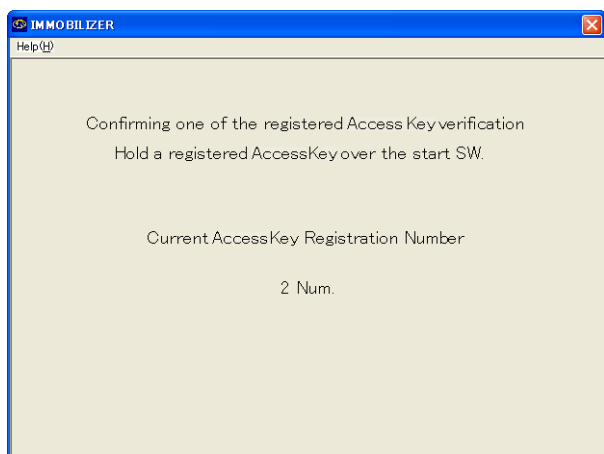


SMU-01343



12. As the number of registered Access Key confirmation screen will be displayed, place one of the registered Access Key, the key, which you do not want to delete the ID, over the push engine switch (push-button ignition switch).

After the buzzer sounds once, move the Access Key away from the push engine switch (push-button ignition switch) and go to the next step.

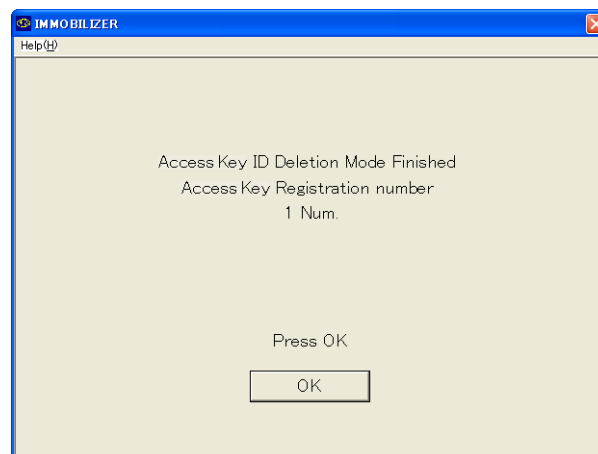


SMU-01344

#### NOTE:

- The ID of a Access Key placed over the push engine switch (push-button ignition switch) will only be left.
- When holding the Access Key up to the push engine switch (push-button ignition switch), bring the Access Key close to the push engine switch (push-button ignition switch) as shown below.
  - 1) Let the mechanical key insertion opening of the Access Key face down.
  - 2) Hold the Subaru ornament side to the push engine switch (push-button ignition switch) side.
  - 3) Bring it close until it touches the push engine switch (push-button ignition switch).
- The procedure to hold a Access Key over the push engine switch (push-button ignition switch) has to be done within 30 seconds after the screen above appears.

13. The screen shown below will appear if Access Key ID deletion ends normally. Click the [OK] button.



SMU-01345

14. Complete this procedure after confirming if the keyless access with push button start system works properly by using a Access Key, which has the ID not deleted.

## Registering the Remote Control Engine Starter

You can get remote control engine starter registered in the keyless access with push button start system.

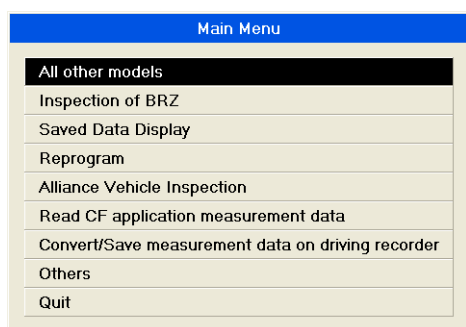
#### NOTE:

- Remote control engine starter is the specification only for the Japan.
- Please refer to the "REGISTRATION MANUAL FOR IMMOBILIZER" for the 2012 and later MY vehicles without a security tag.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.

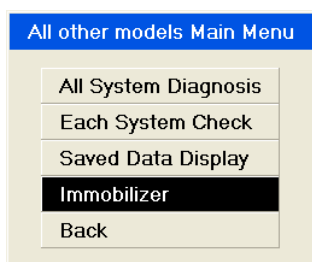


2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



SMU-01294

3. Select [Immobilizer] at the item selection screen.

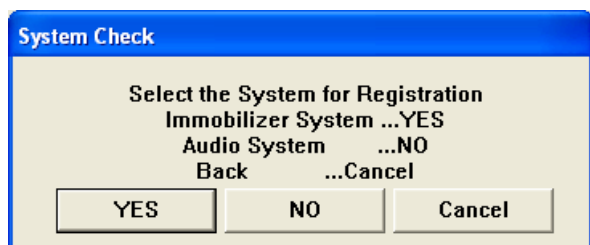


SMU-01297

**NOTE:**

When select [Inspection of BRZ] in step 2, after having select [Each System Check], please select [Immobilizer].

4. Click the [YES] button if the system selection screen is displayed.

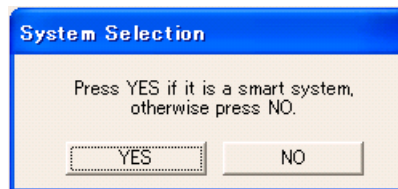


SMU-00946

**NOTE:**

Audio System is the specification only for the U.K.

5. On the next screen, confirm the system is keyless access with push button start system. Click the [YES] button.



SMU-00910

**NOTE:**

The term [smart system] that appears on this screen is synonymous with the term [keyless access with push button start system] used in this text.

6. Input the teaching operation code, and then click the [OK] button.



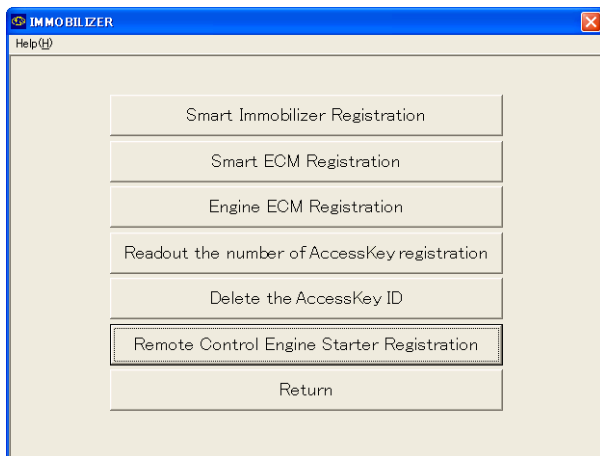
SMU-00911

**NOTE:**

When you wish to return to the Main Menu screen, click the [QUIT] button.

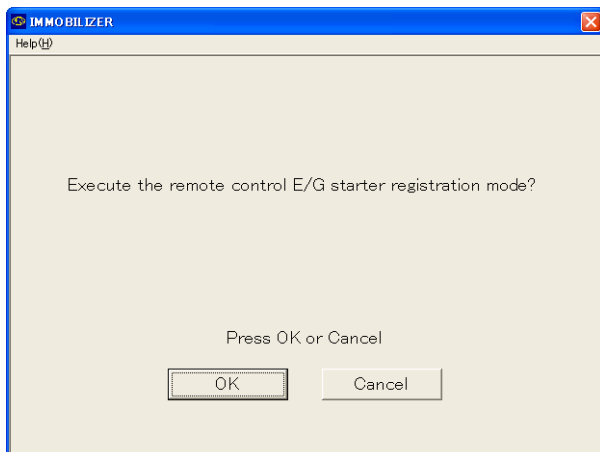


7. The registration mode selection dialog box appears. Click the [Remote Control Engine Starter Registration] button.



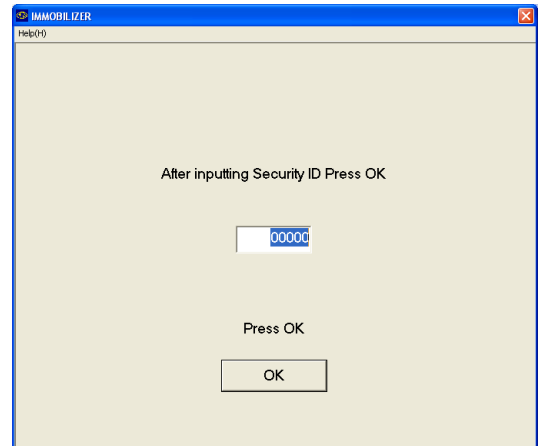
SMU-01346

8. On the registration mode confirmation dialog box that appears, click the [OK] button.



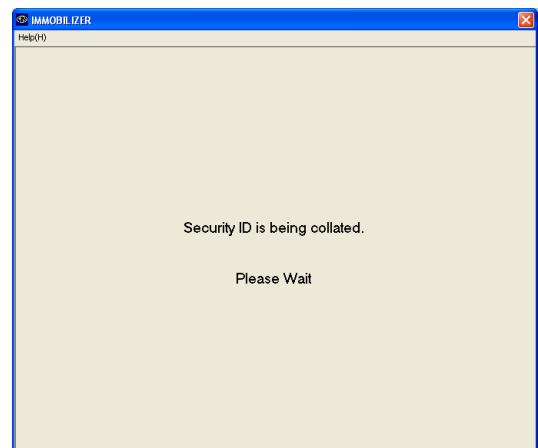
SMU-00943

9. Input the security ID and then click the [OK] button.



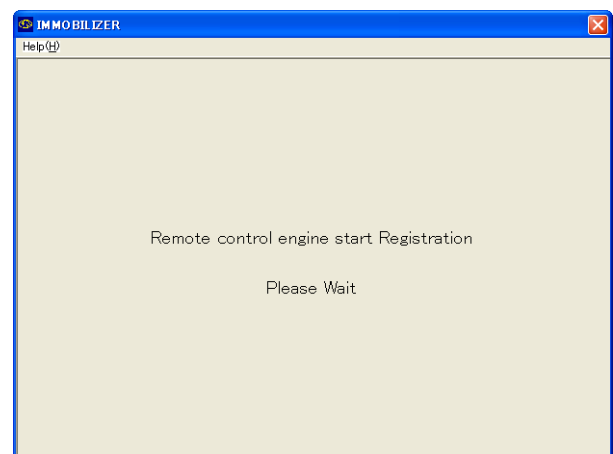
SMU-00914

10. Stand by as the security ID is being collated.



SMU-00915

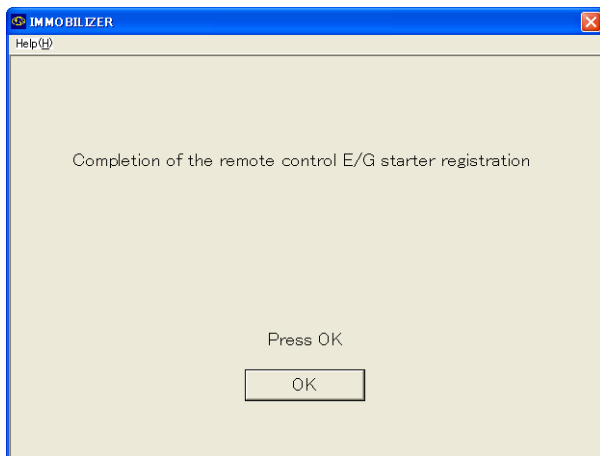
11. Wait until the remote control engine starter is then being registered.



SMU-00944



12. The screen shown below will appear if remote control engine starter registration ends normally. Click the [OK] button.



SMU-00945

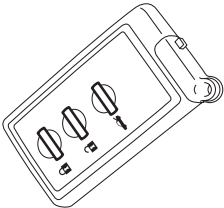
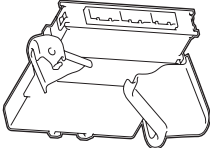
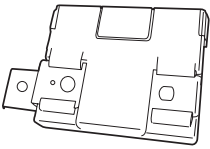
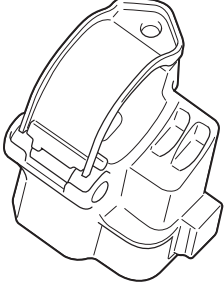
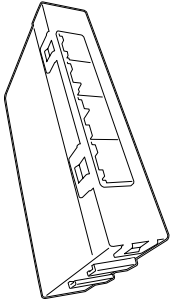
13. After confirming that the keyless access with push button start system and remote control engine starter operate normally, quit the registration operation.



## Keyless access with push button start system: Correspondence table at the time of parts failure

### IMPORTANT:

Parts to be replaced always shall be replaced by new parts, never by used parts.  
When a second-hand part is used to repair, inside of each part used in the system may be damaged.

The part which cannot change for a used part(The following illustration is an example. The shape of each part is different by a vehicle model)				
•Access Key	•Collation control module	•ID Code Box	•Steering Lock control module	•Body integrated module
 SMU-01248	 SMU-01249	 SMU-01250	 SMU-01251	 SMU-01252

### Explanation of the SSM III registration mode

Mode name	Contents	Items to be prepared 1	Items to be prepared 2	Remarks
Registering the Smart Immobilizer	To be performed at the time of additional registration of a Access Key or at the time of replacement of the collation control module, body integrated module or a combination meter. (Up to seven Access Key can be registered.)	Security ID	One registered Access Key	At the time of collation control module replacement, all Access Key registered for the vehicle are required.
Registering the Smart control module	To be performed when the ID code box or the steering lock control module has been replaced.	Security ID	One registered Access Key	
Delete the Access Key ID	Leave the ID of one Access Key and delete all others. (One is required at the time of mode execution.)	Security ID	One registered Access Key	
Registering the Engine control module	Perform registration between engine control module and ID code box.	Security ID		This mode cannot be registered unless all parts other than the engine control module have been registered.
Registering the Remote Control Engine Starter	When a remote control engine starter has been installed.	Security ID		

\*Smart immobilizer registration also includes steering lock initialization work and engine control module registration.



## Parts replacement table

### NOTE:

- # This mark indicates that the part is not defective, but must be replaced for theft prevention. (\*1, \*2)
- When performing each registration, make sure that the Ignition switch is turned ON and driver's door is kept open. If ignition switch is OFF or driver's door is closed, Body integrated module will enter sleep mode, therefore each registration can not be performed.
- After replacing Collation control module without performing [Registering the Smart Immobilizer], if ignition switch is turned ON/OFF for 10 times, it will be impossible to turn ignition switch ON again. In this case, open driver's door and perform [Registering the Smart Immobilizer]. (In this case, it will possible to perform [Registering the Smart Immobilizer] even when ignition switch is OFF)

<In case one part failed/was lost>

Failed or lost part										Parts requiring replacement or securing in case of failure of the parts shown left							Measures after parts replacement				
Access Key		Colla- tion control module	Steer- ing Lock control module	ID Code Box	Engine control module	Body in- tegrat- ed module	Combi- nation meter	Access Key	Colla- tion control module	Steer- ing Lock control module	ID Code Box	Engine control module	Body in- tegrat- ed module	Combi- nation meter	Treatment procedure 1	Treatment procedure 2	Treatment procedure 3	Treatment procedure 4	Treatment procedure 5		
Exam- ples func- tion- ing nor- mal- ly ex- ists	All failed/ lost														Treatment procedure 1	Treatment procedure 2	Treatment procedure 3	Treatment procedure 4	Treatment procedure 5		
	O							One regis- tered Ac- cess Key							Deletion of the Access Key ID (deletion of the ID of a failed or lost Access Key)	Execution of smart im- mobilizer registration (when a Access Key is to be added)					
								All Access Key to be registered	#						Execution of smart im- mobilizer registration (*1)	(*4)					
			O					All regis- tered Ac- cess Key	O						Execution of smart im- mobilizer registration	(*4)					
								One regis- tered Ac- cess Key		O					Execution of smart control module regis- tration	Steering lock initializa- tion work (*3)					
								One regis- tered Ac- cess Key			O				Execution of smart control module regis- tration	Execution of engine control module regis- tration					
						O						O			Execution of engine control module regis- tration						
								One regis- tered Ac- cess Key					O		Execution of smart im- mobilizer registration						
								One regis- tered Ac- cess Key						O	Execution of smart im- mobilizer registration						

\*1. When all Access Key have failed or been lost, collation control module and ID code box must be replaced by new ones and smart immobilizer registration must be performed.

\*2. In case of replacing Collation control module without all registered Access Key are complete, replace also ID Code Box with new one and perform [Registering the Smart Immobilizer].

\*3. Steering lock initialization work: Initialization is complete if the steering is locked about 10 seconds after the Ignition switch is turned off and driver's door was either opened then closed or closed then opened.

\*4. When the collation control module has been replaced for a vehicle equipped with a remote control engine starter, perform registration of the remote control engine starter.

\*5. After Collation control module exchange, please register all the registered Access Key using the first Registering the Smart Immobilizer. When you register only one Master Access Key, you cannot register other registered Access Key. (You can register the key which you have not registered with a new article.)



<In case two parts failed/were lost>

Failed or lost part										Parts requiring replacement or securing in case of failure of the parts shown left						Measures after parts replacement				
Access Key		Colla- tion control module	Steer- ing Lock control module	ID Code Box	Engine control module	Body in- tegrat- ed module	Combi- nation meter	Access Key	Colla- tion control module	Steer- ing Lock control module	ID Code Box	Engine control module	Body in- tegrat- ed module	Combi- nation meter	Treatment procedure 1	Treatment procedure 2	Treatment procedure 3	Treatment procedure 4	Treatment procedure 5	
Exam- ples func- tioning normal- ly exists	All failed/ lost																			
o		o						All regis- tered Ac- cess Key	o		#				Execution of smart im- mobilizer registration (*2) (*5)	(*4)				
o			o					One regis- tered Ac- cess Key		o					Execution of smart im- mobilizer registration	Steering lock initializa- tion work (*3)	Deletion of the Access Key ID (deletion of the ID of a failed or lost Access Key)	Execution of smart im- mobilizer registration (when a Access Key is to be added)		
o				o				One regis- tered Ac- cess Key			o				Execution of smart im- mobilizer registration	Execution of engine control module regis- tration	Deletion of the Access Key ID (deletion of the ID of a failed or lost Access Key)	Execution of smart im- mobilizer registration (when a Access Key is to be added)		
o					o			One regis- tered Ac- cess Key				o			Deletion of the Access Key ID (deletion of the ID of a failed or lost Access Key)	Execution of engine control module regis- tration	Execution of smart im- mobilizer registration (when a Access Key is to be added)			
o						o		One regis- tered Ac- cess Key					o		Deletion of the Access Key ID (deletion of the ID of a failed or lost Access Key)	Execution of smart im- mobilizer registration (when a Access Key is to be added)				
o		o					o	One regis- tered Ac- cess Key	o						Deletion of the Access Key ID (deletion of the ID of a failed or lost Access Key)	Execution of smart im- mobilizer registration (when a Access Key is to be added)				
o	o	o						All Access Key to be registered	o		#				Execution of smart im- mobilizer registration (*1)	(*4)				
o	o		o					All Access Key to be registered	#	o	#				Execution of smart im- mobilizer registration (*1)	(*4)				
o	o			o				All Access Key to be registered	#		o				Execution of smart im- mobilizer registration (*1)	(*4)				
o	o				o			All Access Key to be registered	#		#	o			Execution of smart im- mobilizer registration (*1)	(*4)				

\*1. When all Access Key have failed or been lost, collation control module and ID code box must be replaced by new ones and smart immobilizer registration must be performed.

\*2. In case of replacing Collation control module without all registered Access Key are complete, replace also ID Code Box with new one and perform [Registering the Smart Immobilizer].

\*3. Steering lock initialization work: Initialization is complete if the steering is locked about 10 seconds after the ignition switch is turned off and driver's door was either opened then closed or closed then opened.

\*4. When the collation control module has been replaced for a vehicle equipped with a remote control engine starter, perform registration of the remote control engine starter.

\*5. After Collation control module exchange, please register all the registered Access Key using the first Registering the Smart Immobilizer. When you register only one Master Access Key, you cannot register other registered Access Key. (You can register the key which you have not registered with a new article.)



Failed or lost part										Parts requiring replacement or securing in case of failure of the parts shown left							Measures after parts replacement				
Access Key		Colla- tion control module	Steer- ing Lock control module	ID Code Box	Engine control module	Body in- tegrat- ed module	Combi- nation meter	Access Key to be registered	Colla- tion control module	Steer- ing Lock control module	ID Code Box	Engine control module	Body in- tegrat- ed module	Combi- nation meter	Treatment procedure 1	Treatment procedure 2	Treatment procedure 3	Treatment procedure 4	Treatment procedure 5		
Exam- ples func- tioning normal- ly exists	All failed/ lost																				
	o					o		All Access Key to be registered	#		#		o		Execution of smart im- mobilizer registration (*1)	(*4)					
	o						o	All Access Key to be registered	#		#			o	Execution of smart im- mobilizer registration (*1)	(*4)					
			o					All regis- tered Ac- cess Key	o	o					Execution of smart im- mobilizer registration (*5)	(*4)					
				o				All regis- tered Ac- cess Key	o		o				Execution of smart im- mobilizer registration (*5)	(*4)					
					o			All regis- tered Ac- cess Key	o			o			Execution of smart im- mobilizer registration (*5)	(*4)					
						o		All regis- tered Ac- cess Key	o				o		Execution of smart im- mobilizer registration (*5)	(*4)					
								All regis- tered Ac- cess Key	o						Execution of smart im- mobilizer registration (*5)	(*4)					
								All regis- tered Ac- cess Key	o					o	Execution of smart im- mobilizer registration (*5)	(*4)					
								One regis- tered Ac- cess Key		o	o	o			Execution of smart control module regis- tration	Steering lock initializa- tion work (*3)	Execution of engine control module regis- tration				
					o			One regis- tered Ac- cess Key		o					Execution of smart control module regis- tration	Steering lock initializa- tion work (*3)	Execution of engine control module regis- tration				
						o		One regis- tered Ac- cess Key		o			o		Execution of smart control module regis- tration	Execution of smart im- mobilizer registration					
							o	One regis- tered Ac- cess Key		o				o	Execution of smart im- mobilizer registration	Execution of smart im- mobilizer registration					
				o	o			One regis- tered Ac- cess Key			o	o			Execution of smart control module regis- tration	Execution of engine control module regis- tration					
								One regis- tered Ac- cess Key			o				Execution of smart im- mobilizer registration	Execution of smart control module regis- tration					

\*1. When all Access Key have failed or been lost, collation control module and ID code box must be replaced by new ones and smart immobilizer registration must be performed.

\*2. In case of replacing Collation control module without all registered Access Key are complete, replace also ID Code Box with new one and perform [Registering the Smart Immobilizer].

\*3. Steering lock initialization work: Initialization is complete if the steering is locked about 10 seconds after the Ignition switch is turned off and driver's door was either opened then closed or closed then opened.

\*4. When the collation control module has been replaced for a vehicle equipped with a remote control engine starter, perform registration of the remote control engine starter.

\*5. After Collation control module exchange, please register all the registered Access Key using the first Registering the Smart Immobilizer. When you register only one Master Access Key, you cannot register other registered Access Key. (You can register the key which you have not registered with a new article.)



Failed or lost part										Parts requiring replacement or securing in case of failure of the parts shown left						Measures after parts replacement				
Access Key		Colla- tion control module	Steer- ing Lock control module	ID Code Box	Engine control module	Body/in- tegrat- ed module	Combi- nation meter	Access Key	Colla- tion control module	Steer- ing Lock control module	ID Code Box	Engine control module	Body in- tegrat- ed module	Combi- nation meter	Treatment procedure 1	Treatment procedure 2	Treatment procedure 3	Treatment procedure 4	Treatment procedure 5	
Exam- ples func- tioning normal- ly exists				o			o	One regis- tered Ac- cess Key							Execution of smart im- mobilizer registration	Execution of smart control module regis- tration				
					o	o		One regis- tered Ac- cess Key				o	o		Execution of smart im- mobilizer registration					
					o		o	One regis- tered Ac- cess Key				o		o	Execution of smart im- mobilizer registration					
								One regis- tered Ac- cess Key					o	o	Execution of smart im- mobilizer registration					

\*1. When all Access Key have failed or been lost, collation control module and ID code box must be replaced by new ones and smart immobilizer registration must be performed.

\*2. In case of replacing Collation control module without all registered Access Key are complete, replace also ID Code Box with new one and perform [Registering the Smart Immobilizer].

\*3. Steering lock initialization work: Initialization is complete if the steering is locked about 10 seconds after the ignition switch is turned off and driver's door was either opened then closed or closed then opened.

\*4. When the collation control module has been replaced for a vehicle equipped with a remote control engine starter, perform registration of the remote control engine starter.

\*5. After Collation control module exchange, please register all the registered Access Key using the first Registering the Smart Immobilizer. When you register only one Master Access Key, you cannot register other registered Access Key. (You can register the key which you have not registered with a new article.)



<In case there are three parts that failed/lost>

Failed or lost part					Parts requiring replacement or securing in case of failure of the parts shown left							Measures after parts replacement							
Access Key		Colla- tion control module	Steer- ing Lock control module	ID Code Box	Engine control module	Body in- tegrat- ed module	Combina- tion meter	Access Key	Colla- tion control module	Steer- ing Lock control module	ID Code Box	Engine control module	Body in- tegrat- ed module	Combina- tion meter	Treatment procedure 1	Treatment procedure 2	Treatment procedure 3	Treatment procedure 4	Treatment procedure 5
Exam- ples func- tioning normal- ly exists	O	O	O					All regis- tered Ac- cess Key	O	O	#				Execution of smart im- mobilizer registration (*2) (*5)	(*4)			
O		O		O				All regis- tered Ac- cess Key	O		O				Execution of smart im- mobilizer registration (*5)	(*4)			
O		O			O			All regis- tered Ac- cess Key	O		#	O			Execution of smart im- mobilizer registration (*2) (*5)	(*4)			
O		O				O		All regis- tered Ac- cess Key	O		#		O		Execution of smart im- mobilizer registration (*2) (*5)	(*4)			
O		O					O	All regis- tered Ac- cess Key	O		#				Execution of smart im- mobilizer registration (*2) (*5)	(*4)			
O		O						All regis- tered Ac- cess Key	O		#				Execution of smart im- mobilizer registration (*2) (*5)	(*4)			
O			O	O			O	One regis- tered Ac- cess Key		O	O				Execution of smart im- mobilizer registration (*2) (*5)	Steering lock initializa- tion work (*3)	Execution of engine control module regis- tration	Deletion of the Access Key ID (deletion of the Access Key)	Execution of smart im- mobilizer registration (when a Access Key is to be added)
O			O					One regis- tered Ac- cess Key		O					Execution of smart control module regis- tration	Steering lock initializa- tion work (*3)	Execution of engine control module regis- tration	Deletion of the Access Key ID (deletion of the Access Key)	Execution of smart im- mobilizer registration (when a Access Key is to be added)
O			O			O		One regis- tered Ac- cess Key		O			O		Execution of smart control module regis- tration	Deletion of the Access Key ID (deletion of the Access Key)	Execution of smart im- mobilizer registration		
O			O				O	One regis- tered Ac- cess Key						O	Execution of smart control module regis- tration	Deletion of the Access Key ID (deletion of the Access Key)	Execution of smart im- mobilizer registration		
O				O	O			One regis- tered Ac- cess Key							Execution of smart control module regis- tration	Execution of engine control module regis- tration	Deletion of the Access Key ID (deletion of the Access Key)	Execution of smart im- mobilizer registration (when a Access Key is to be added)	
O						O		One regis- tered Ac- cess Key			O				Execution of smart control module regis- tration	Execution of engine control module regis- tration	Deletion of the Access Key ID (deletion of the Access Key)	Execution of smart im- mobilizer registration (when a Access Key is to be added)	

\*1. When all Access Key have failed or been lost, collation control module and ID code box must be replaced by new ones and smart immobilizer registration must be performed.

\*2. In case of replacing Collation control module without all registered Access Key are complete, replace also ID Code Box with new one and perform [Registering the Smart Immobilizer].

\*3. Steering lock initialization work: Initialization is complete if the steering is locked about 10 seconds after the Ignition switch is turned off and driver's door was either opened then closed or closed then opened.

\*4. When the collation control module has been replaced for a vehicle equipped with a remote control engine starter, perform registration of the remote control engine starter.

\*5. After Collation control module exchange, please register all the registered Access Key using the first Registering the Smart Immobilizer. When you register only one Master Access Key, you cannot register other registered Access Key. (You can register the key which you have not registered with a new article.)



## Registering the Immobilizer (Equipped with the Keyless Access with Push Button Start System)

Failed or lost part										Parts requiring replacement or securing in case of failure of the parts shown left							Measures after parts replacement				
Access Key		Colla- tion control module	Steer- ing Lock control module	ID Code Box	Engine control module	Body in- tegrat- ed module	Combi- nation meter				Treatment procedure 1	Treatment procedure 2	Treatment procedure 3	Treatment procedure 4	Treatment procedure 5						
Exam- ples func- tioning normal- ly exists	All failed/ lost										Execution of smart control module regis- tration	Execution of engine control module regis- tration	Deletion of the Access Key ID (deletion of the ID of a failed or lost Access Key)	Execution of smart im- mobilizer registration (when a Access Key is to be added)							
O				O			O				Execution of smart control module regis- tration	Execution of smart im- mobilizer registration (when a Access Key is to be added)	Deletion of the Access Key ID (deletion of the ID of a failed or lost Access Key)								
O					O						Deletion of the Access Key ID (deletion of the ID of a failed or lost Access Key)	Execution of smart im- mobilizer registration (when a Access Key is to be added)									
O					O						Deletion of the Access Key ID (deletion of the ID of a failed or lost Access Key)	Execution of smart im- mobilizer registration (when a Access Key is to be added)									
O											Execution of smart im- mobilizer registration	Deletion of the Access Key ID (deletion of the ID of a failed or lost Access Key)									
	O		O								Execution of smart im- mobilizer registra- tion(*)	(*)									
	O										Execution of smart im- mobilizer registration	(*)									
	O				O						Execution of smart im- mobilizer registra- tion(*)	(*)									
	O										Execution of smart im- mobilizer registra- tion(*)	(*)									
	O										Execution of smart im- mobilizer registra- tion(*)	(*)									
	O		O								Execution of smart im- mobilizer registra- tion(*)	(*)									

4. When all Access Key have failed or been lost, collision control module and ID code box must be replaced by new ones and smart immobilizer registration must be performed.

1. When an Access Key have failed or been lost, Collation Control module and ID code both must be replaced by new ones and Smart Immobilizer registration must be performed.
2. In case of replacing Collation control module without all registered Access Key are complete, replace also ID Code Box with new one and perform [Registering the Smart Immobilizer].

23. Steering lock initialization work: Initialization is complete if the steering is locked about 10 seconds after the ignition switch is turned off and driver's door was either opened then closed or closed then opened.

4. When the collation control module has been replaced for a vehicle equipped with a remote control engine starter, perform registration of the remote control engine starter.

5. After Collation control module exchange, please register all the registered Access Key using the first Registering the Smart Immobilizer. When you register only one Master Access Key, you cannot register other registered Access Key. (You can register the key which you have not registered with a new article.)



Failed or lost part										Parts requiring replacement or securing in case of failure of the parts shown left						Measures after parts replacement				
Access Key		Colla- tion control module	Steer- ing Lock control module	ID Code Box	Engine control module	Body in- tegrat- ed module	Combi- nation meter	Access Key to be registered	Colla- tion control module	Steer- ing Lock control module	ID Code Box	Engine control module	Body in- tegrat- ed module	Combi- nation meter	Treatment procedure 1	Treatment procedure 2	Treatment procedure 3	Treatment procedure 4	Treatment procedure 5	
Exam- ples func- tioning normal- ly exists	All failed/ lost		O		O			All Access Key to be registered	#	O	#	O			Execution of smart im- mobilizer registra- tion(*1)	(*4)				
	O		O			O		All Access Key to be registered	#	O	#		O		Execution of smart im- mobilizer registra- tion(*1)	(*4)				
	O		O				O	All Access Key to be registered	#	O	#			O	Execution of smart im- mobilizer registra- tion(*1)	(*4)				
	O			O	O			All Access Key to be registered	#		O	O			Execution of smart im- mobilizer registra- tion(*1)	(*4)				
	O					O		All Access Key to be registered	#		O		O		Execution of smart im- mobilizer registra- tion(*1)	(*4)				
	O			O				All Access Key to be registered	#			O			Execution of smart im- mobilizer registra- tion(*1)	(*4)				
	O							All Access Key to be registered	#						Execution of smart im- mobilizer registra- tion(*1)	(*4)				
	O							All Access Key to be registered	#						Execution of smart im- mobilizer registra- tion(*1)	(*4)				
	O							All Access Key to be registered	#						Execution of smart im- mobilizer registra- tion(*1)	(*4)				
	O							All Access Key to be registered	#						Execution of smart im- mobilizer registra- tion(*1)	(*4)				
							All regis- tered Ac- cess Key	O	O	O	O				Execution of smart im- mobilizer registra- tion(*5)	(*4)				
							All regis- tered Ac- cess Key	O	O			O			Execution of smart im- mobilizer registra- tion(*5)	(*4)				

- \*1. When all Access Key have failed or been lost, collation control module and ID code box must be replaced by new ones and smart immobilizer registration must be performed.  
 \*2. In case of replacing Collation control module without all registered Access Key are complete, replace also ID Code Box with new one and perform [Registering the Smart Immobilizer].  
 \*3. Steering lock initialization work: Initialization is complete if the steering is locked about 10 seconds after the ignition switch is turned off and driver's door was either opened then closed or closed then opened.  
 \*4. When the collation control module has been replaced for a vehicle equipped with a remote control engine starter, perform registration of the remote control engine starter.  
 \*5. After Collation control module exchange, please register all the registered Access Key using the first Registering the Smart Immobilizer. When you register only one Master Access Key, you cannot register other registered Access Key. (You can register the key which you have not registered with a new article.)



Failed or lost part										Parts requiring replacement or securing in case of failure of the parts shown left						Measures after parts replacement				
Access Key		Colla- tion control module	Steer- ing Lock control module	ID Code Box	Engine control module	Body/in- tegrat- ed module	Comb- nation meter	Access Key		Colla- tion control module	Steer- ing Lock control module	ID Code Box	Engine control module	Body/in- tegrat- ed module	Comb- nation meter	Treatment procedure 1	Treatment procedure 2	Treatment procedure 3	Treatment procedure 4	Treatment procedure 5
Exam- ples func- tioning normal- ly exists		O	O			O		All regis- tered Ac- cess Key	O	O	O			O		Execution of smart im- mobilizer registration (*5)	(*4)			
		O	O				O	All regis- tered Ac- cess Key	O	O	O					Execution of smart im- mobilizer registration (*5)	(*4)			
		O		O	O			All regis- tered Ac- cess Key	O	O		O	O			Execution of smart im- mobilizer registration (*5)	(*4)			
		O		O		O		All regis- tered Ac- cess Key	O	O	O			O		Execution of smart im- mobilizer registration (*5)	(*4)			
		O		O			O	All regis- tered Ac- cess Key	O	O					O	Execution of smart im- mobilizer registration (*5)	(*4)			
		O			O	O		All regis- tered Ac- cess Key	O	O	O			O		Execution of smart im- mobilizer registration (*5)	(*4)			
		O			O		O	All regis- tered Ac- cess Key	O	O			O	O		Execution of smart im- mobilizer registration (*5)	(*4)			
		O				O		All regis- tered Ac- cess Key	O	O			O		O	Execution of smart im- mobilizer registration (*5)	(*4)			
			O		O	O		One regis- tered Ac- cess Key			O	O	O			Execution of smart im- mobilizer registra- tion	Steering lock initializa- tion work (*3)	Execution of engine control module regis- tration		
			O			O		One regis- tered Ac- cess Key			O	O		O		Execution of smart im- mobilizer registration				
				O			O	One regis- tered Ac- cess Key							O	Execution of smart im- mobilizer registration				
			O			O		One regis- tered Ac- cess Key			O					Execution of smart im- mobilizer registration				

\*1. When all Access Key have failed or been lost, collation control module and ID code box must be replaced by new ones and smart immobilizer registration must be performed.

\*2. In case of replacing Collation control module without all registered Access Key are complete, replace also ID Code Box with new one and perform [Registering the Smart Immobilizer].

\*3. Steering lock initialization work: Initialization is complete if the steering is locked about 10 seconds after the ignition switch is turned off and driver's door was either opened then closed or closed then opened.

\*4. When the collation control module has been replaced for a vehicle equipped with a remote control engine starter, perform registration of the remote control engine starter.

\*5. After Collation control module exchange, please register all the registered Access Key using the first Registering the Smart Immobilizer. When you register only one Master Access Key, you cannot register other registered Access Key. (You can register the key which you have not registered with a new article.)



Failed or lost part						Parts requiring replacement or securing in case of failure of the parts shown left						Measures after parts replacement										
Access Key		Colla- tion control module	Steer- ing Lock control module	ID Code Box	Engine control module	Body in- tegrat- ed module	Combi- nation meter			Access Key	Colla- tion control module	Steer- ing Lock control module	ID Code Box	Engine control module	Body in- tegrat- ed module	Combi- nation meter	Treatment procedure 1	Treatment procedure 2	Treatment procedure 3	Treatment procedure 4	Treatment procedure 5	
Exam- ples func- tioning normal- ly exists			○		○		○		One regis- tered Ac- cess Key		○	○		○		○		Execution of smart im- mobilizer registration				
			○			○	○		One regis- tered Ac- cess Key			○			○		○	Execution of smart im- mobilizer registration				
				○	○	○			One regis- tered Ac- cess Key				○	○	○			Execution of smart im- mobilizer registration				
					○				One regis- tered Ac- cess Key				○	○		○		Execution of smart im- mobilizer registration				
					○				One regis- tered Ac- cess Key					○	○		○	Execution of smart im- mobilizer registration				
									One regis- tered Ac- cess Key						○	○	○	Execution of smart im- mobilizer registration				
									One regis- tered Ac- cess Key								○	Execution of smart im- mobilizer registration				

\*1. When all Access Key have failed or been lost, collation control module and ID code box must be replaced by new ones and smart immobilizer registration must be performed.

\*2. In case of replacing Collation control module without all registered Access Key are complete, replace also ID Code Box with new one and perform [Registering the Smart Immobilizer].

\*3. Steering lock initialization work: Initialization is complete if the steering is locked about 10 seconds after the ignition switch is turned off and driver's door was either opened then closed or closed then opened.

\*4. When the collation control module has been replaced for a vehicle equipped with a remote control engine starter, perform registration of the remote control engine starter.

\*5. After Collation control module exchange, please register all the registered Access Key using the first Registering the Smart Immobilizer. When you register only one Master Access Key, you cannot register other registered Access Key. (You can register the key which you have not registered with a new article.)



## Registering the Audio Security (U.K Only)

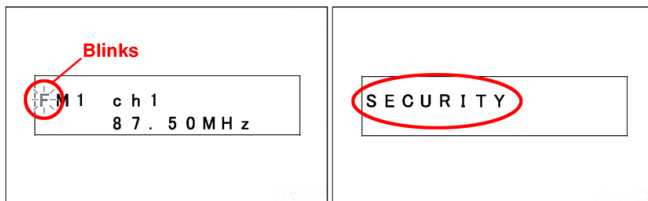
\*Please note that this procedure document is in English only, because audio security function is for United Kingdom only.

You can perform serial registry of audio and navigation system with audio security function.

### NOTE:

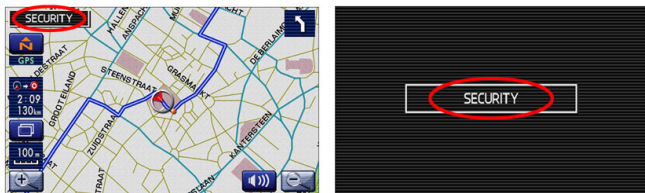
When audio or navigation system screen displays message shown below, it is necessary to perform audio security registering.

#### <Audio>



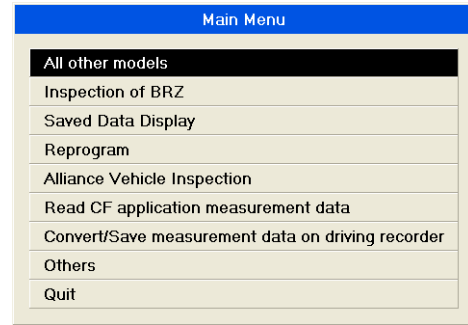
SMU-01095

#### <Navigation System>



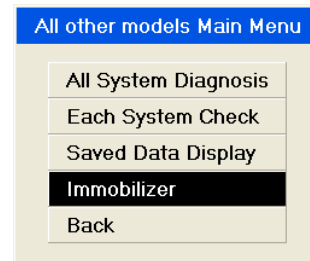
SMU-01096

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



SMU-01294

3. Select [Immobilizer] at the item selection screen.

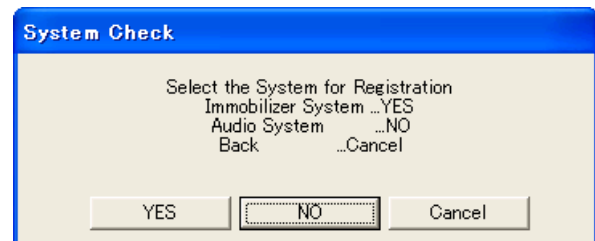


SMU-01297

### NOTE:

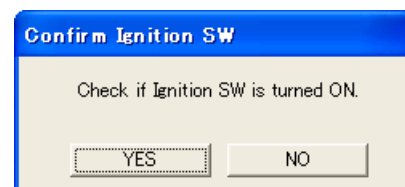
When select [Inspection of BRZ] in step 2, after having select [Each System Check], please select [Immobilizer].

4. Click the [NO] button if the system selection screen is displayed.



SMU-01097

5. Click [YES] after confirming if the ignition switch is ON, as following screen will be displayed.



SMU-00909

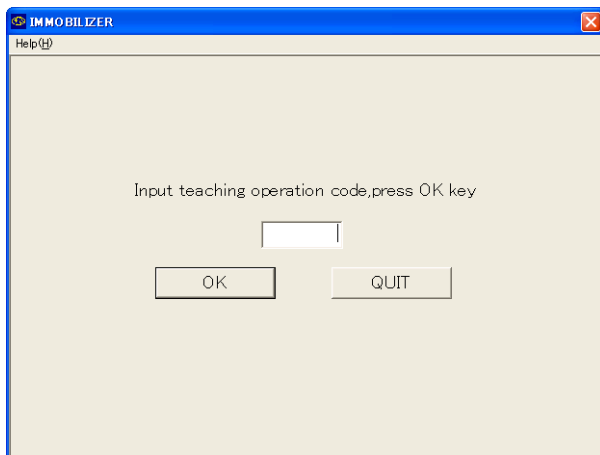


6. In response to the compliance verification dialog box that appears, click the [OK] button.



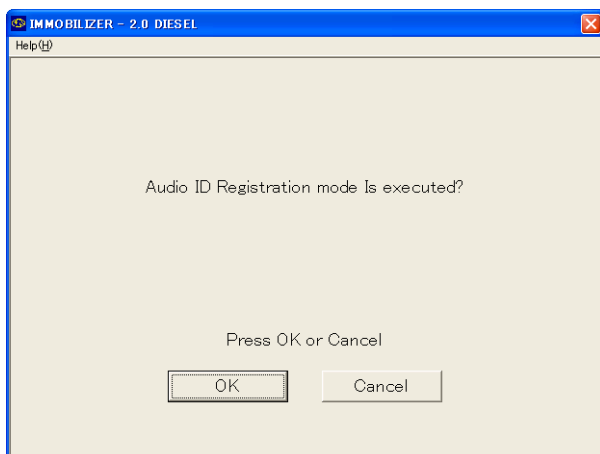
SMU-00876

7. Input the teaching operation code, and then click the [OK] button.



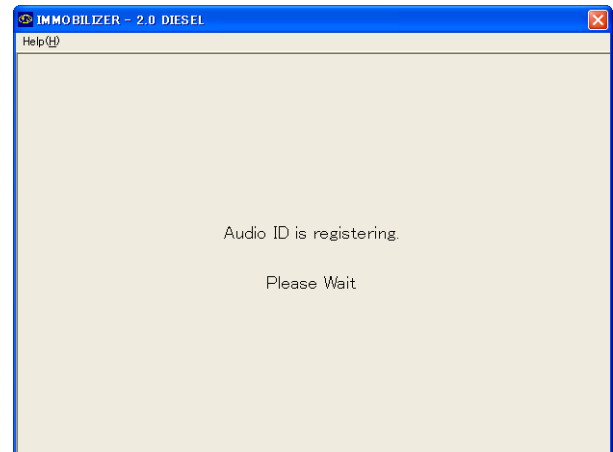
SMU-00911

8. On the registration mode confirmation dialog box that appears, click the [OK] button.



SMU-01098

9. Please stand by while the audio or navigation system registering is underway.

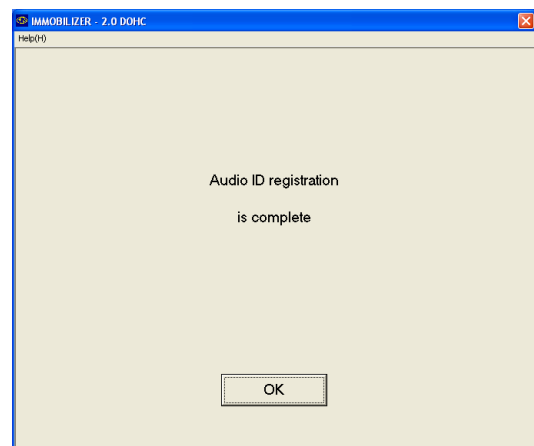


SMU-01099

**NOTE:**

While registering is underway, audio or navigation system screen displays [REENTRY] message.

- 10.The screen shown below will appear if registration ends normally. Click the [OK] button.



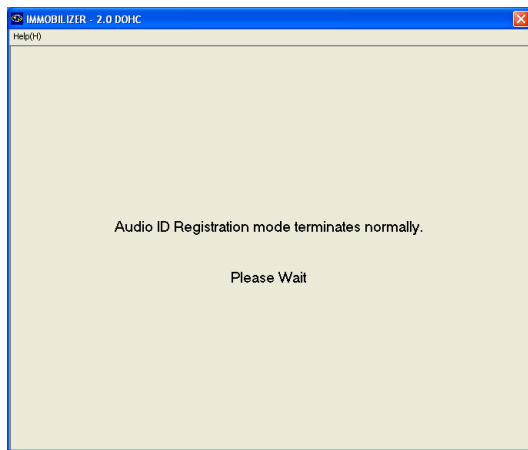
SMU-01100

**NOTE:**

When registering is completed, audio or navigation system screen displays [COMPLETE] message.



11. Please stand by while the screen displays message shown below, until screen returns to code entry mode for teaching operation.



SMU-01101

12. After confirming that the audio and navigation system is operating normally, quit the registration operation.



## Learning and inspection mode related to AT

Performing air bleeding and learning possible after replacing automatic transmission ASSY, ATF and TCM.

It is also possible to inspect when performing AWD to FWD switching or differential related parts miss installation.

### IMPORTANT:

The required learning or work according to the performed work is shown in the following list.

The learning or work in the following list must be performed, as otherwise shifting shocks and other defects may be caused.

Work item	Required learning or work
TCM replacement	<ul style="list-style-type: none"> <li>• AT learning</li> </ul>
ATF replacement	<ul style="list-style-type: none"> <li>• AT air bleeding</li> </ul>
Replacement or disassembly of the transmission ASSY	<ul style="list-style-type: none"> <li>• AT learning</li> <li>• AT air bleeding</li> </ul>
Control valve body replacement	<ul style="list-style-type: none"> <li>• AT learning</li> <li>• AT air bleeding</li> </ul>
Execution of [Clear Memory 2]	<ul style="list-style-type: none"> <li>• AT learning</li> </ul>
Rear differential replacement Front hypoid gear replacement Rear hypoid gear replacement	<ul style="list-style-type: none"> <li>• Rear differential inspection mode</li> </ul>

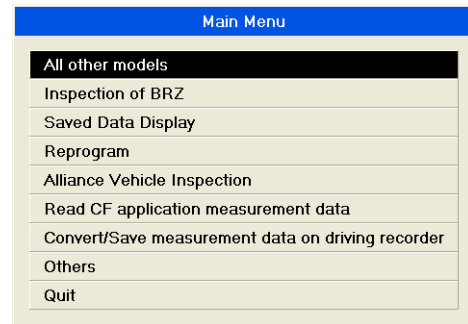
### NOTE:

Depending on vehicle specification, [AT air bleeding] or [Rear differential inspection] may not be necessary. In such case, [AT air bleeding mode] or [Rear differential inspection mode] will not be displayed on the menu.

## Getting Ready

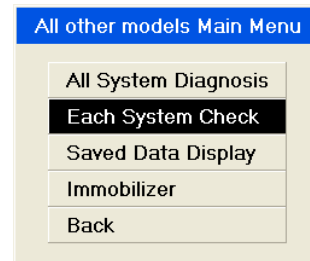
1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.

2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



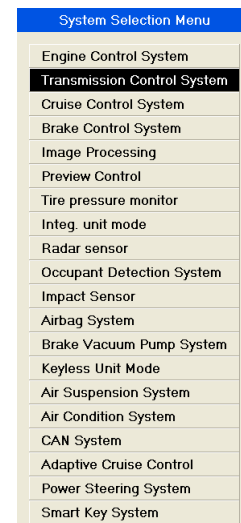
SMU-01294

3. Select [Each System Check] at the item selection screen.



SMU-01296

4. Select [Transmission Control System] at the System Selection menu.



SMU-01043

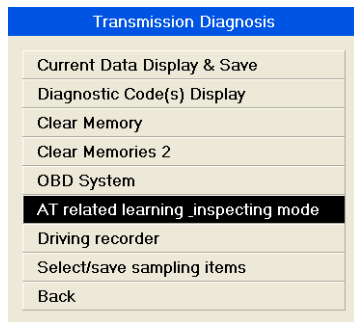
5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.





SMU-01044

6. This displays the dialog box shown below. Select [AT related learning\_inspecting mode] and then press the Enter key or left-click with the mouse.



SMU-01045

## AT learning mode

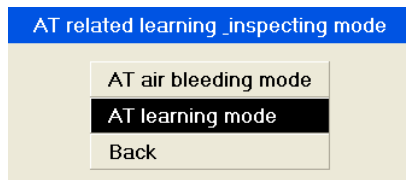
After completing this procedure, make sure to confirm if there is no malfunction, such as a shifting shock, by actually driving the car. If you find any malfunctions, execute the learning procedure again.

In case that malfunctions are not solved after performing the learning process again, check if there are any problems with other parts.

### IMPORTANT:

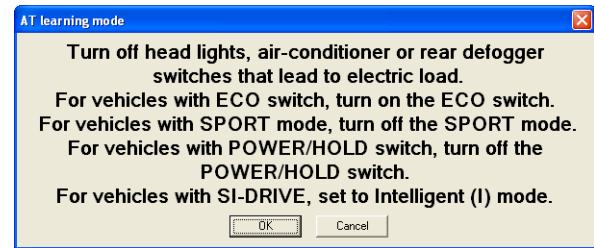
Always perform [AT learning Mode] at the time of TCM replacement and transmission ASSY replacement or disassembly.

1. Select [AT learning Mode] from the item selection screen and press the [Enter] key or click the left mouse button.



SMU-01046

2. Following the instructions that appear on the screen, setup each switch and mode. Click the [OK] button to go to the next screen.

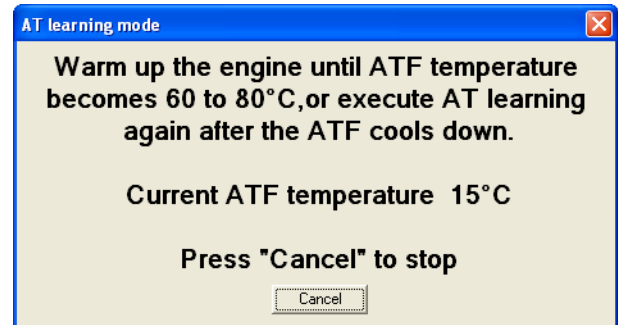


SMU-01122

### NOTE:

If following message is shown, warm up or cool down engine until ATF temperature becomes as instructed on the screen. Once the ATF temperature reaches instructed temperature, the next procedure is executed automatically.

To cancel learning, click the [Cancel] button.



SMU-01123

### NOTE:

Stop the engine when ATF is to be cooled down.



3. Lift up the vehicle following the screen instructions and pull the parking brake.  
Click the [OK] button to go to the next screen.

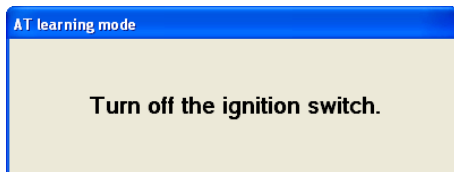


SMU-01078

**IMPORTANT:**

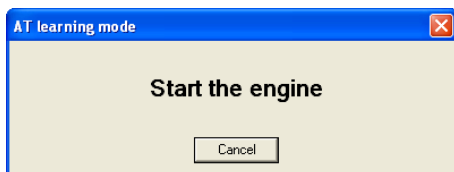
- When performing learning control, be sure to keep the lower edge of the tires 30 cm (11.8 in) or more above the ground as vehicle vibrates during the work.
- When performing the transfer clutch learning, fully apply the parking brake to avoid tires from rotating.
- Move the Select lever to P range.

4. Follow the screen instructions and switch off the ignition switch.



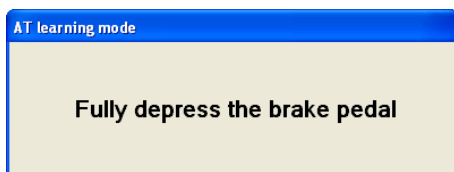
SMU-01079

5. Follow the screen instructions and start the engine.



SMU-01080

6. Follow the screen instructions and depress the brake pedal all the way.

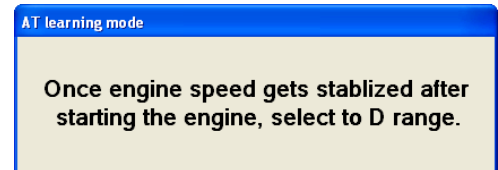


SMU-01082

**NOTE:**

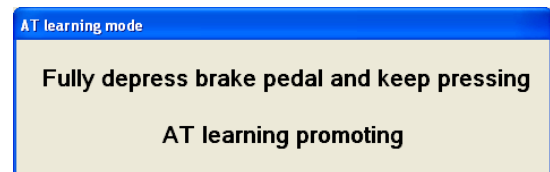
Afterwards, leave the brake pedal depressed until step 8.

7. Follow the screen instructions and set the select lever to range D.



SMU-01124

8. The following screen is displayed. Please wait.

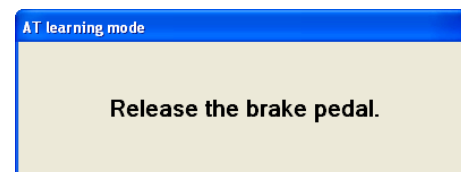


SMU-01084

**NOTE:**

- During the learning process, if above screen is being shown for more than two minutes, release the brake pedal and execute the learning procedure again.
- During the learning process, there are cases that hunting of the engine may occur and accordingly learning may end abnormally. In such cases, execute the learning procedure again with the headlights in the High beam condition.

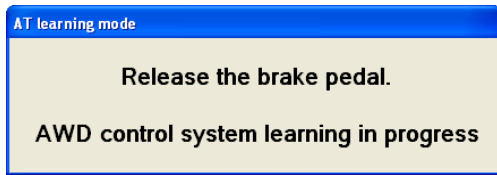
9. Follow the screen instructions and release the brake pedal.



SMU-01085

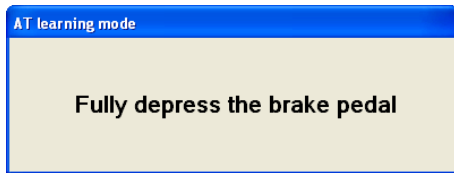


10.The following screen is displayed. Please wait.



SMU-01086

11.Follow the screen instructions and depress the brake pedal all the way.

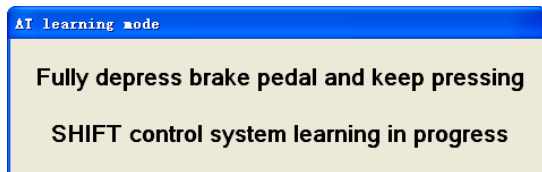


SMU-01082

**NOTE:**

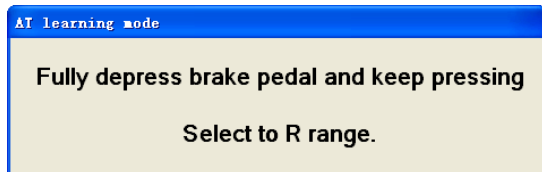
Afterwards, leave the brake pedal depressed until step 19.

12.The following screen is displayed. Please wait.



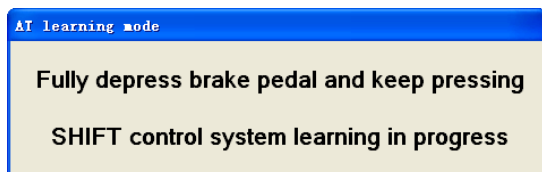
SMU-01087

13.Follow the screen instructions and set the select lever to range R.



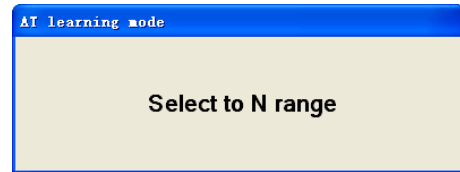
SMU-01088

14.The following screen is displayed. Please wait.



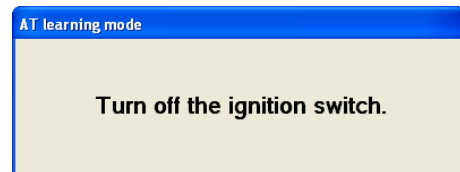
SMU-01087

15.Follow the screen instructions and set the select lever to range N.



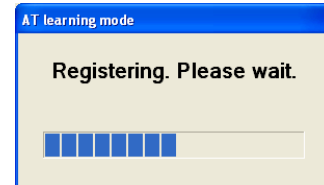
SMU-01089

16.Follow the screen instructions and switch off the ignition switch.



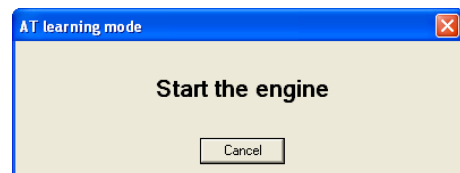
SMU-01079

17.The following screen is displayed. Please wait.



SMU-01091

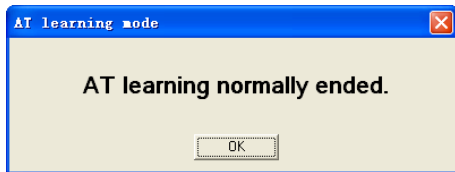
18.Follow the screen instructions and start the engine.



SMU-01080



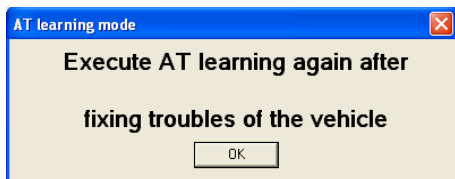
19. The following screen is displayed when learning has been completed correctly. Click the [OK] button.



SMU-01092

**NOTE:**

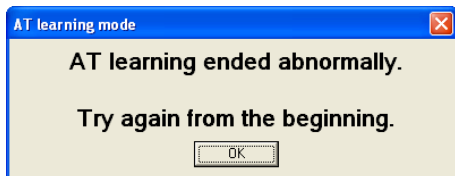
- The following screen may be displayed during the work. In that case, confirm the display contents and then click the [OK] button.



SMU-01081

Of the contents shown above, their main causes and remedies are shown in the following chart.

Main causes of the contents shown	Remedies
<ul style="list-style-type: none"> <li>• Detection of diagnostic codes</li> </ul>	After correcting the troubles based on the diagnostic codes, perform the [AT learning mode] again from the beginning.



SMU-01093

Of the contents shown above, their main causes and remedies are shown in the following chart.

Main causes of the contents shown	Remedies
<ul style="list-style-type: none"> <li>• A diagnostic code was detected during the AT learning process.</li> </ul>	After correcting the troubles based on the diagnostic codes, perform the [AT learning mode] again from the beginning.
<ul style="list-style-type: none"> <li>• Un-instructed operations were taken during the AT learning process.</li> <li>• Depressing the brake pedal is not enough</li> <li>• Pulling the parking brake lever is not enough</li> <li>• Abnormal Idle Up</li> </ul>	Execute the [AT learning mode] again from the beginning.

- In case AT learning process is terminated by an error, Select lever may become unable to engage into P range. In such a case, once turn off Ignition Switch, and then move Select lever again.
- Depending on vehicle specification, some of these displays may not appear at all. In such case, please follow the directions actually shown on the screen.

## AT air bleeding mode

**IMPORTANT:**

Always perform [AT air bleeding mode] at the time of control valve body, ATF replacement and transmission ASSY replacement or disassembly.

**NOTE:**

For the work procedure, refer to "AT Learning Mode" of the respective item and perform the work following the screen instructions.



## Rear differential inspection mode

It is possible to inspect if there is parts that do not conform to vehicle after performing rear differential, transmission, or front/rear hypoid gear replacement.

Follow the on-screen instructions to execute this procedure.

### IMPORTANT:

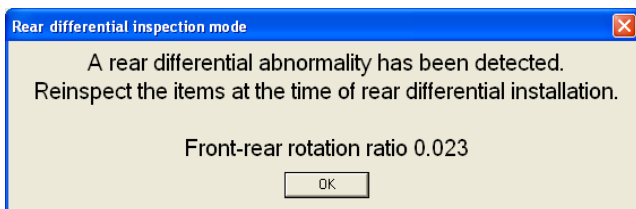
Always perform [Rear differential inspection mode] after performing above parts replacement.

If following screen is shown, please check again whether replaced parts conform to vehicle or not.

### NOTE:

Depending on vehicle specification, [AWD ON/OFF switching mode] may not be shown in menu. In such case perform AWD ON/OFF switching by removing fuse from FWD fuse holder.

Refer to Service Manual for FWD fuse holder installation location.



SMU-01193

### NOTE:

Depending on vehicle specification, following screen may be shown. In such case, rear differential inspection is not needed.



SMU-01194

## AWD ON/OFF switching mode

This function allows you to perform FWD from/to AWD switching.

Follow the on-screen instructions to execute this procedure.

### IMPORTANT:

Always switch back to AWD after switching to FWD.



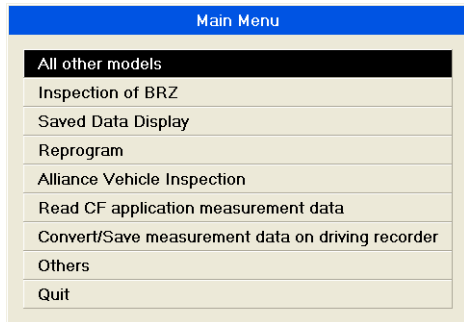
## Maintenance mode (Excluding North America)

\* This function is supported only in Diesel models.

DPF maintenance, control module replacement and maintenance at the time of engine oil change can be performed.

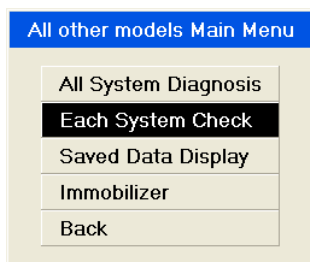
### Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



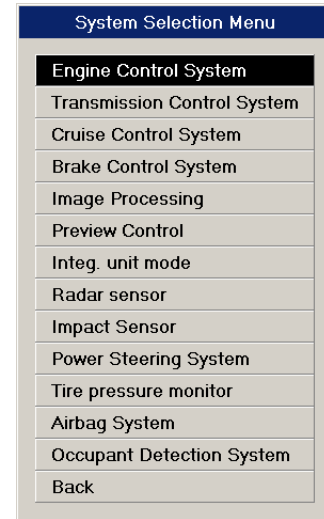
SMU-01294

3. Select [Each System Check] at the item selection screen.



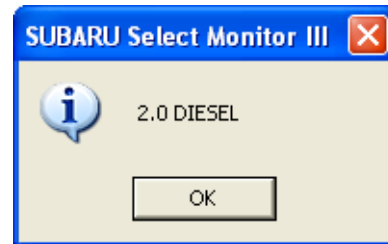
SMU-01296

4. Select [Engine Control System] at the System Selection menu.



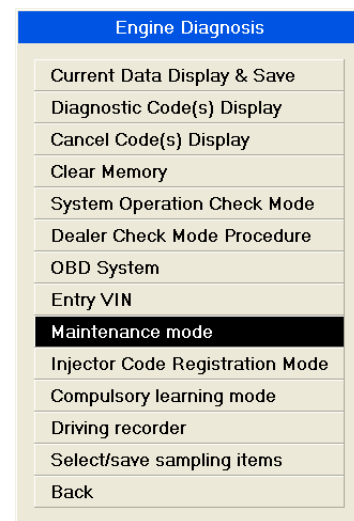
SMU-00665

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-01047

6. Select [Maintenance mode] at the displayed main menu.

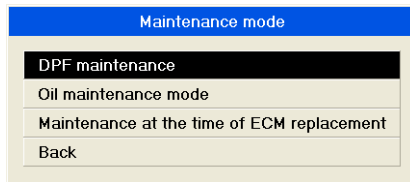


SMU-01148



## DPF maintenance

Select [DPF maintenance] at the maintenance mode menu.



SMU-01149

## DPF regeneration

Soot which has accumulated in the DPF is burned forcibly and the DPF can be regenerated.

### WARNING:

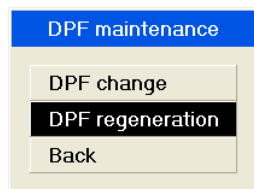
While operating DPF regeneration, please make sure the following conditions are satisfied, because there is a danger of a burn, CO intoxication, and fire.

- 1) Do not touch the exhaust pipe etc. because the vicinity of there becomes a high temperature very much.
- 2) Operate this procedure with the front hood open, because the engine room becomes a high temperature very much.
- 3) Operate this procedure in a well ventilated area.
- 4) Do not place flammable materials in the vicinity of this vehicle.

### IMPORTANT:

- Turn off all switches that become electric loads such as the headlight, air-conditioners, and rear defogger.
- DPF regeneration from the beginning to the end takes a long time. (cases more than one hour)

1. Select [DPF regeneration] at the DPF maintenance menu.



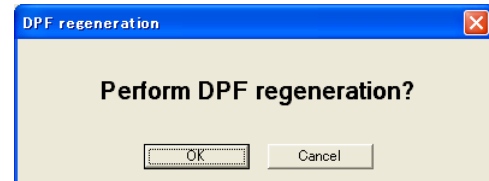
SMU-01150

2. The following screen is displayed. Click the [OK] button.

### NOTE:

There is the case that this screen is not displayed by DPF soot sedimentation quantity.

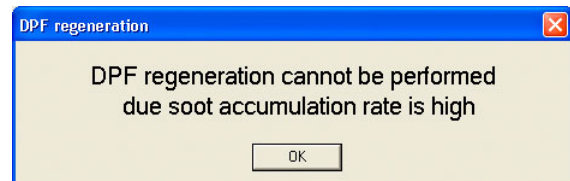
3. This causes a DPF regeneration confirmation message to appear. Click the [OK] button.



SMU-01151

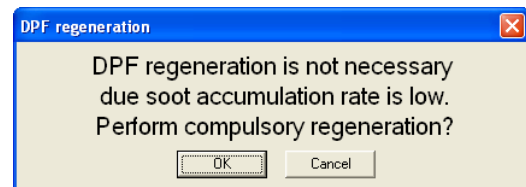
### NOTE:

- When the following screen is displayed, too much soot has accumulated and DPF regeneration is not possible. Click the [OK] button, refer to DPF change work in the manual and replace the DPF.



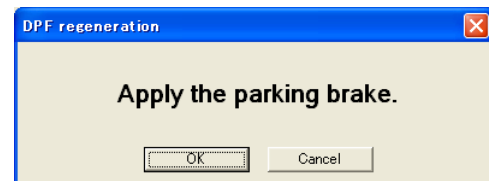
SMU-01234

- When the following screen is displayed, not much soot has accumulated and DPF regeneration is not required. Click the [OK] button as required.



SMU-01235

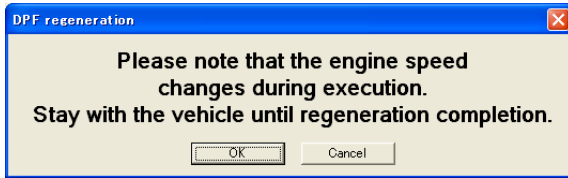
4. Pull the parking brake according to the screen instructions. Click the [OK] button to go to the next screen.



SMU-01154



5. The following screen is displayed. Confirm the display contents and click the [OK] button.



SMU-01155

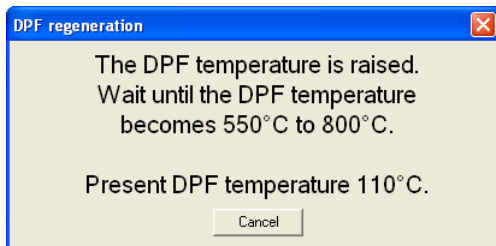
6. The following screen is displayed. Please wait.



SMU-01156

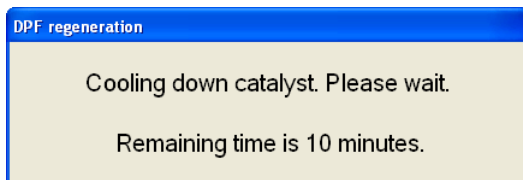
**NOTE:**

If following message is displayed. Please wait. Once the DPF temperature reaches indicated range, the next procedure is executed automatically. To cancel DPF regeneration, click the [Cancel] button.



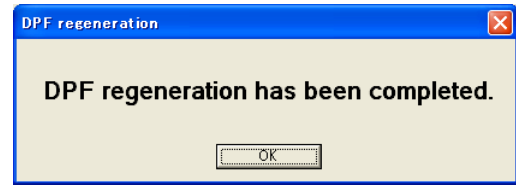
SMU-01227

7. After DPF regeneration finished, for cooling down exhaust system following screen is displayed. Please wait.



SMU-01228

8. The screen shown below will appear if DPF regeneration ends normally. Click the [OK] button.



SMU-01158

## DPF change

At the time of DPF change, the cumulative ash ratio and the soot accumulation ratio must be reset.

**IMPORTANT:**

- Always reset the cumulative ash ratio and the soot accumulation ratio at the time of DPF replacement.
- Never reset the cumulative ash ratio and the soot accumulation ratio before DPF replacement. This can cause trouble because of a wrong diagnosis.

**NOTE:**

For the work procedure, refer to "DPF regeneration" of the respective item and perform the work following the screen instructions.

## Oil maintenance mode

### Engine oil change

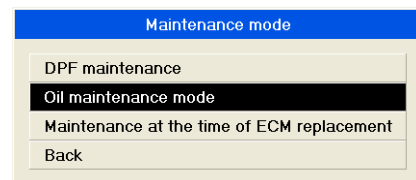
The oil dilution ratio required at the time of engine oil change can be reset.

**IMPORTANT:**

- At the time of engine oil change, the oil dilution ratio must be reset.
- Never reset the oil dilution ratio before the engine oil is changed. This can cause trouble because of a wrong diagnosis.

Select [Oil maintenance mode] at the maintenance mode menu.

Perform the following work procedure according to the screen instructions under reference to [DPF regeneration] of this section.



SMU-01159



## Maintenance at the time of control module replacement

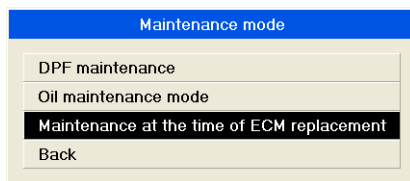
### Reading of DPF/engine oil-related learning values: control module to SSM

Before engine control module replacement, the learning values related to DPF/engine oil must be read and saved.

#### IMPORTANT:

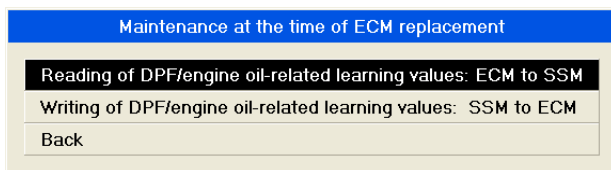
When the DPF/engine oil-related learning value cannot be read in because of engine control module trouble, catalyst & DPF, engine oil, and engine oil filter must be replaced by new products. If these items are not replaced by new products, it will become impossible for the system to determine the correct time for DPF regeneration, engine oil change and engine oil filter replacement.

1. Select [Maintenance at the time of ECM replacement] at the maintenance mode menu.



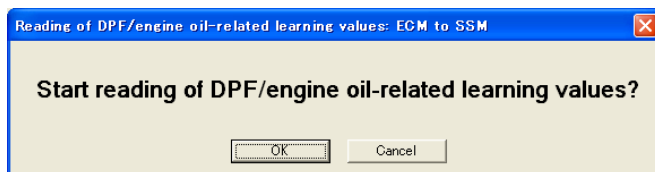
SMU-01160

2. Select [Reading of DPF/engine oil-related learning value: ECM to SSM] at the item selection screen.



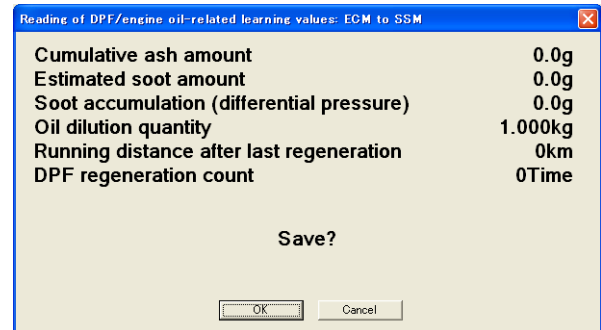
SMU-01161

3. The confirmation screen for start of learning value reading is displayed. Click the [OK] button.



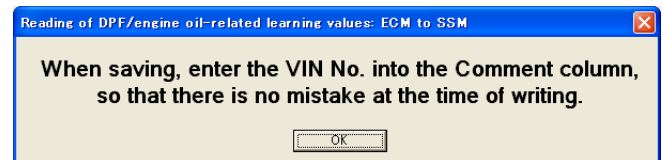
SMU-01162

4. The read data are displayed. Click the [OK] button.



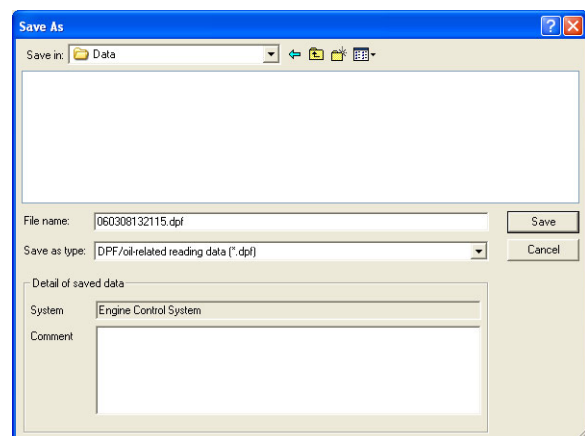
SMU-01163

5. This displays a dialog box below. Click the [OK] button.



SMU-01164

6. This causes the sampled data save dialog box to appear. The name of the data file being saved is generated automatically in accordance with the current time and date. If you want to use the generated file name as-is, click the dialog box [Save] button. If you want to change to a different file name, type in the name you want.



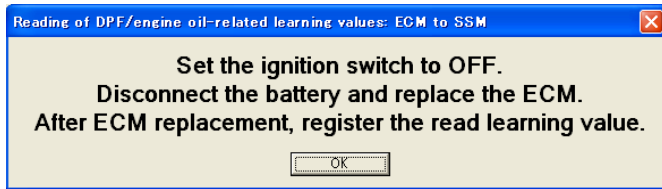
SMU-01165



**NOTE:**

- Sample data files are saved in the Data folder where the PC application is installed. To change to another storage location, specify the location you want in the Save in box of the save data dialog box.
- The Comment box of the Save As dialog box can be used to save general comments associated with the data or file.

7. The following dialog is displayed. Confirm the contents and click the [OK] button.



SMU-01166

### Writing of DPF/engine oil-related learning values: SSM to control module

After engine control module replacement, the learning values related to DPF/engine oil can be written to the engine control module.

**IMPORTANT:**

At the time of engine control module replacement, always perform [Writing of DPF/engine oil-related learning values: SSM to ECM].

**NOTE:**

For the work procedure, refer to "Reading of DPF/engine oil-related learning values: control module to SSM" of the respective item and perform the work following the screen instructions.



## Learning, inspection, and registration mode related to diesel engines (Excluding North America)

\* This function is not supported in North America.

This item describes the learning functions, inspection functions, and registration functions related to diesel engines.

### IMPORTANT:

The work required for re-registration or learning work etc. because of replaced items is shown in the following list.

The work in the following list must be performed, as otherwise exhaust gas, abnormal noise, bad engine performance, and other defects may be caused.

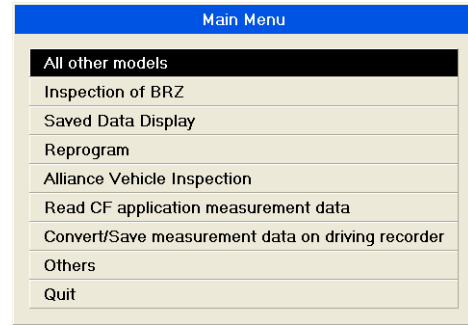
Replacement items	Required work items
Control module	<ul style="list-style-type: none"> <li>• Registering the Immobilizer</li> <li>• Registering the Injector Code</li> <li>• Fuel injector injection amount learning</li> <li>• Fuel pump duty learning</li> <li>• EGR valve opening angle learning</li> <li>• Turbo vanes angle learning</li> </ul>
Fuel pump	<ul style="list-style-type: none"> <li>• Fuel pump duty learning</li> </ul>
Injector	<ul style="list-style-type: none"> <li>• Registering the Injector Code</li> <li>• Fuel injector injection amount learning</li> </ul>
EGR valve	<ul style="list-style-type: none"> <li>• EGR valve opening angle learning</li> </ul>
Turbine	<ul style="list-style-type: none"> <li>• Turbo vanes angle learning</li> </ul>

## Diesel compulsory learning mode

Compulsory learning can be effected at the time of replacement of fuel pump, injector, or EGR valve of a vehicle with a diesel engine.

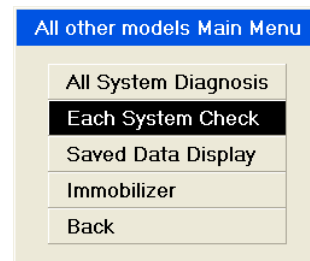
### Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



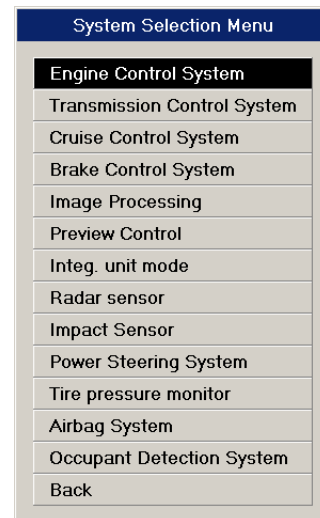
SMU-01294

3. Select [Each System Check] at the item selection screen.



SMU-01296

4. On the System Selection Menu, select [Engine Control System] and then press the Enter key or left click with the mouse.



SMU-00665

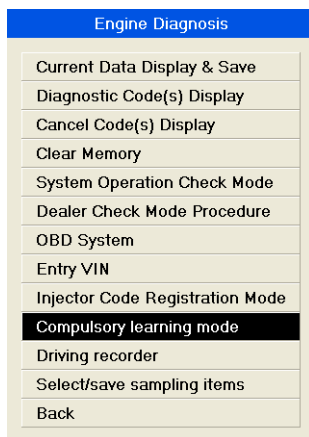


5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-01047

6. This displays the dialog box shown below. Select [Compulsory learning mode] and then press the Enter key or left-click with the mouse.



SMU-01048

## Fuel pump duty learning

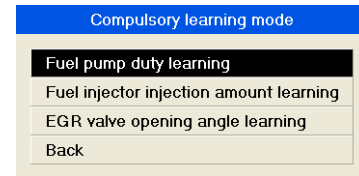
### IMPORTANT:

- At the time of fuel pump and control module replacement, [Fuel pump duty learning] must be performed.
- Turn off all switches that become electric loads such as the headlight, air-conditioners, and rear defogger.

### NOTE:

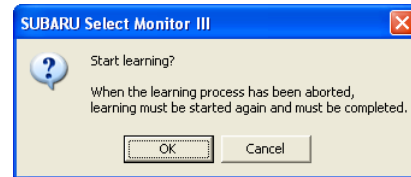
Perform the work with the engine started.

1. Select [Fuel pump duty learning] from the item selection screen and press the [Enter] key or click the left mouse button.



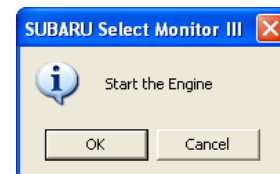
SMU-01049

2. When the dialog box shown below appears, click the [OK] button.



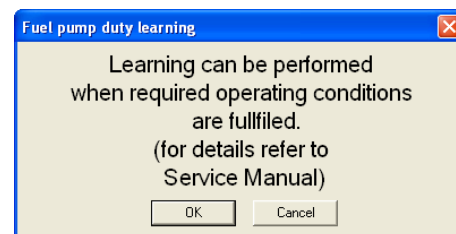
SMU-01229

When the following screen is displayed, start the engine and click the [OK] button.



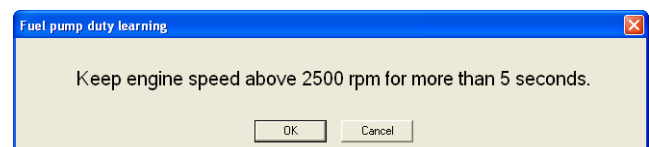
SMU-01051

3. When the dialog box shown below appears, click the [OK] button.



SMU-01208

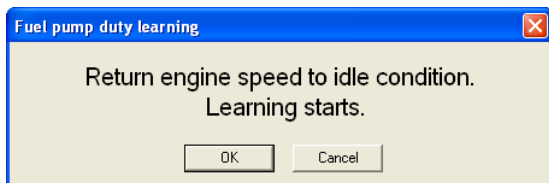
4. This displays the dialog box shown below. Follow the screen instructions and keep the engine speed above 2500rpm for more than 5 seconds. Click the [OK] button to go to the next screen.



SMU-01230

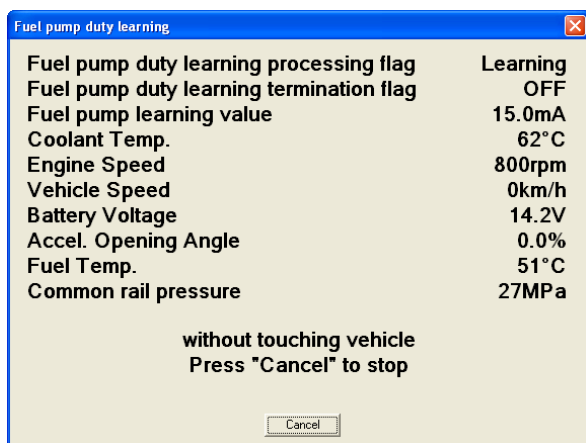


5. This displays the dialog box shown below. Follow the screen instructions and return engine speed to idle condition. Click [OK] button and learning process will begin.



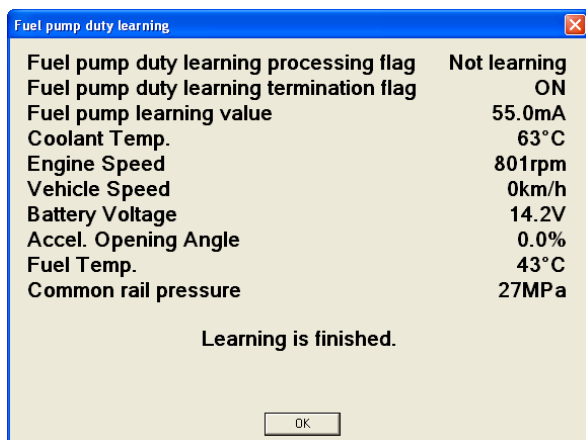
SMU-01231

6. The learning execution screen is displayed. Please wait.



SMU-01232

7. The learning completion screen is displayed. Click the [OK] button.



SMU-01233

## Fuel injector injection amount learning

### IMPORTANT:

At the time of injector and control module replacement, always execute [Fuel injector injection amount learning] and [Registering the Injector Code].

### NOTE:

- Refer to [Fuel pump duty learning] of this item for the work procedure and perform the work following the screen instructions.
- Perform the work with the engine started.

## EGR valve opening angle learning

### IMPORTANT:

At the time of EGR valve and control module replacement, [EGR valve opening angle learning] must be performed.

### NOTE:

- Refer to [Fuel pump duty learning] of this item for the work procedure and perform the work following the screen instructions.
- Perform the work with the engine started.

## Turbo vanes angle learning

### IMPORTANT:

At the time of turbine and control module replacement, [Turbo vanes angle learning] must be performed.

### NOTE:

- Refer to [Fuel pump duty learning] of this item for the work procedure and perform the work following the screen instructions.
- Perform the work with the engine started.
- Perform operation after engine is completely warmed up, due there is a possibility engine stall will occur if performed immediately after engine start.

## Registering the Injector Code

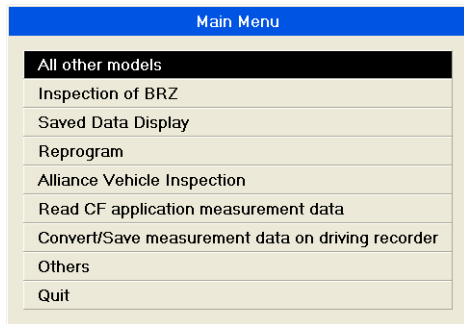
It is possible to register display, read, and save the injector code for vehicles with a diesel engine.

## Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.

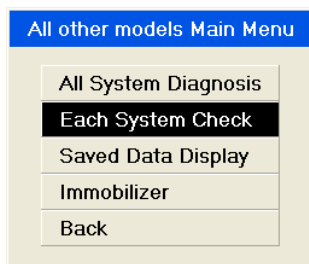


2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



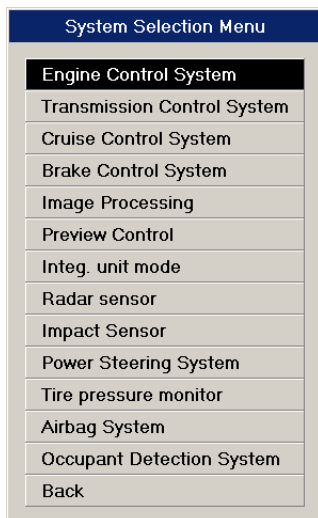
SMU-01294

3. Select [Each System Check] at the item selection screen.



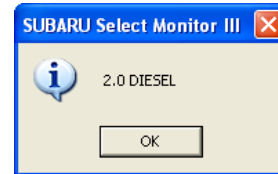
SMU-01296

4. On the System Selection Menu, select [Engine Control System] and then press the Enter key or left click with the mouse.



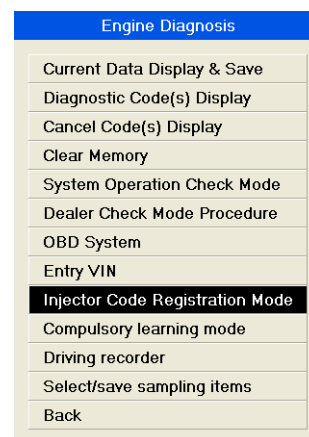
SMU-00665

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-01047

6. From the list of fault diagnosis items, select [Injector Code Registration Mode] and then press the Enter key or left-click with the mouse.



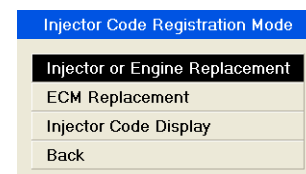
SMU-01055

## Injector or Engine Replacement

### IMPORTANT:

At the time of injector or engine replacement, [Injector or Engine Replacement] must be executed.

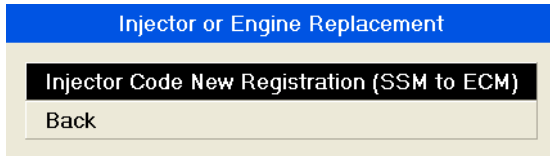
1. Select [Injector or Engine Replacement] from the item selection screen and press the [Enter] key or click the left mouse button.



SMU-01056

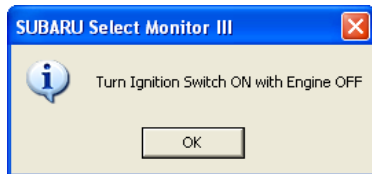


2. This displays the dialog box shown below. Select [Injector Code New Registration (SSM to ECM)] and then press the Enter key or left-click with the mouse.



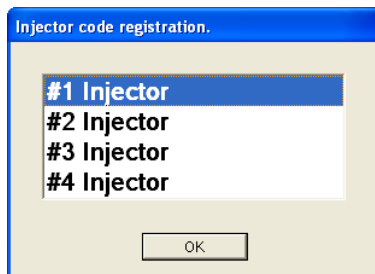
SMU-01057

3. As instructed by the display message, turn on the vehicle's ignition switch (make sure that the engine is currently not running). Click the [OK] button to go to the next screen.



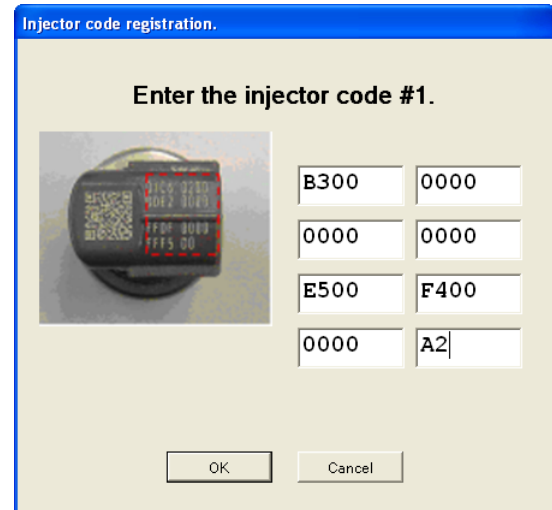
SMU-01058

4. Select the injector for which setting is to be performed from the displayed selection screen and click the [OK] button.



SMU-01059

5. The injector code input screen is displayed. Enter the injector code and click the [OK] button.



SMU-01060

**NOTE:**

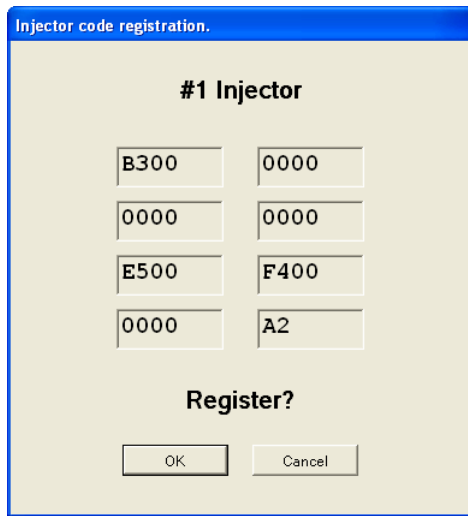
- Enter four digits into each input column (two digits only for the input column at the right bottom) for a total of 30 digits.
- The injector code is listed on the top of the injector.



SMU-01061



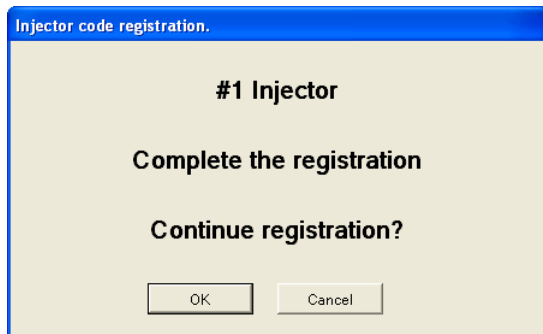
6. The screen for confirmation of the injector code registration contents is displayed. Confirm the registration contents and click the [OK] button.



The screen is titled "Injector code registration." and "#1 Injector". It displays a 2x4 grid of input fields with the following values: Row 1: B300, 0000; Row 2: 0000, 0000; Row 3: E500, F400; Row 4: 0000, A2. Below the grid, it asks "Register?" with "OK" and "Cancel" buttons.

SMU-01062

7. When registration has been completed normally, the registration completion screen is displayed. To continue registration, click the [OK] button and perform the registration work of steps 4 to 6 again. To end registration, click [Cancel] and go to step 8.



The screen is titled "Injector code registration." and "#1 Injector". It displays the text "Complete the registration" and "Continue registration?" with "OK" and "Cancel" buttons.

SMU-01063

8. When the dialog box shown below appears, click the [OK] button.



The dialog box is titled "SUBARU Select Monitor III" and displays the message "Process is aborted" with an "OK" button.

SMU-01064

## At the time of control module replacement

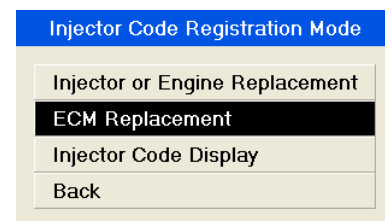
### IMPORTANT:

At the time of control module replacement, [Read Injector Code (ECM to SSM)] and [Register the reading code (SSM to ECM)] must be executed.

### Read Injector Code

The presently registered injector code can be read in and can be saved.

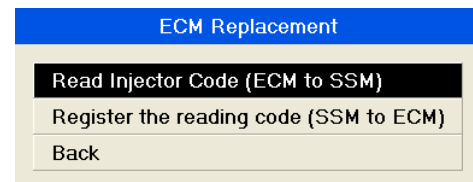
1. Select [ECM Replacement] from the selection screen and press the [Enter] key or click the left mouse button.



The screen is titled "Injector Code Registration Mode". It displays a list of options: "Injector or Engine Replacement", "ECM Replacement" (highlighted), "Injector Code Display", and "Back".

SMU-01065

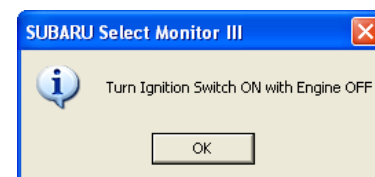
2. This displays the dialog box shown below. Select [Read Injector Code (ECM to SSM)] and then press the Enter key or left-click with the mouse.



The screen is titled "ECM Replacement". It displays a list of options: "Read Injector Code (ECM to SSM)" (highlighted), "Register the reading code (SSM to ECM)", and "Back".

SMU-01066

3. As instructed by the display message, turn on the vehicle's ignition switch (make sure that the engine is currently not running). Click the [OK] button to go to the next screen.



The dialog box is titled "SUBARU Select Monitor III" and displays the message "Turn Ignition Switch ON with Engine OFF" with an "OK" button.

SMU-01058

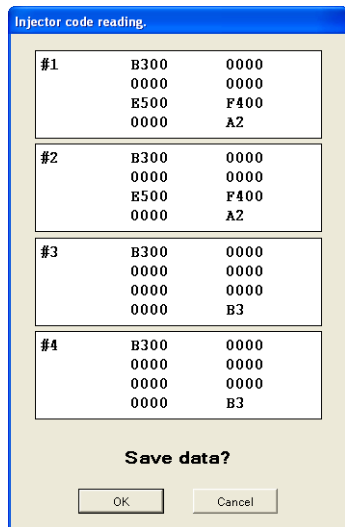


4. The screen for confirmation of injector code reading is displayed. Click the [OK] button.



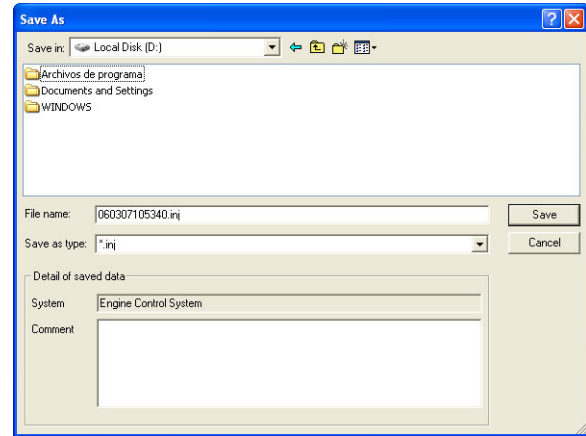
SMU-01067

5. The injector code is displayed. Confirm the contents to be saved and click the [OK] button.



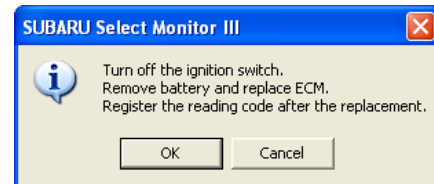
SMU-01068

6. This causes the sampled data save dialog box to appear. The name of the data file being saved is generated automatically in accordance with the current time and date. If you want to use the generated file name as-is, click the dialog box [Save] button. If you want to change to a different file name, type in the name you want.



SMU-01069

7. The following dialog box is displayed. Confirm the screen instructions and click the [OK] button.

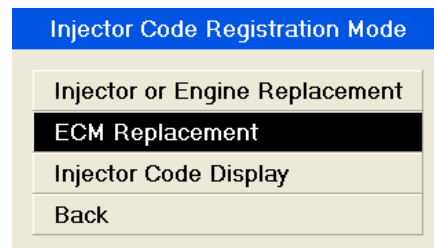


SMU-01070

### Register the reading code

The saved injector code can be registered.

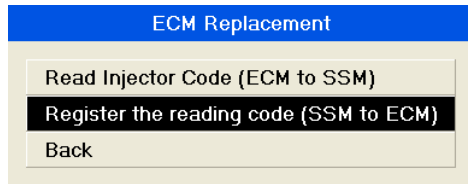
1. Select [ECM Replacement] from the item selection screen and press the [Enter] key or click the left mouse button.



SMU-01065

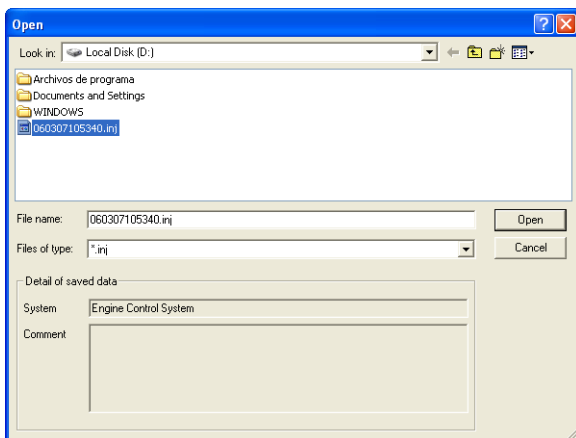


2. This displays the dialog box shown below. Select [Register the reading code (SSM to ECM)] and then press the Enter key or left-click with the mouse.



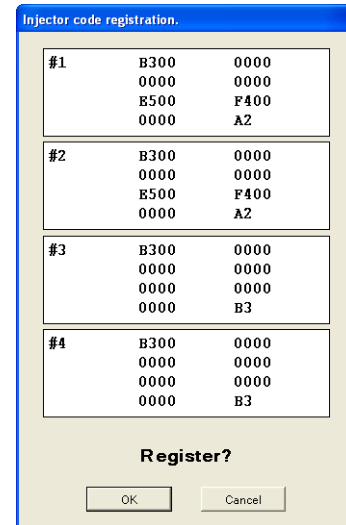
SMU-01071

3. The dialog box with a list of saved data files is displayed. After selecting "Files of type", designate the file you need, and press the Enter key or click the [Open] button.



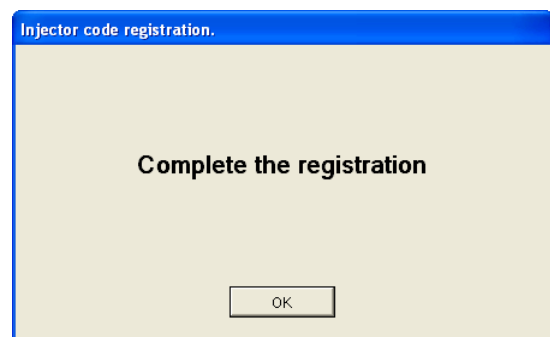
SMU-01072

4. The injector code is displayed. Confirm the contents to be registered and click the [OK] button.



SMU-01073

5. The screen shown below will appear if registration ends normally. Click the [OK] button.

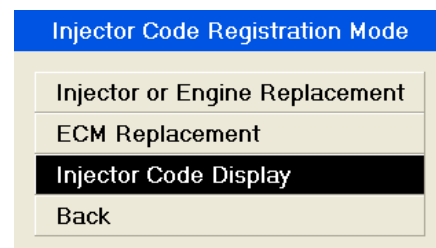


SMU-01074

### Displaying the Injector Code

The presently registered injector code can be confirmed.

1. Select [Injector Code Display] from the item selections screen and press the [Enter] key or click the left mouse button.



SMU-01075

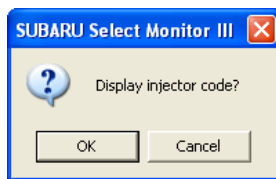


2. As instructed by the display message, turn on the vehicle's ignition switch (make sure that the engine is currently not running).  
Click the [OK] button to go to the next screen.



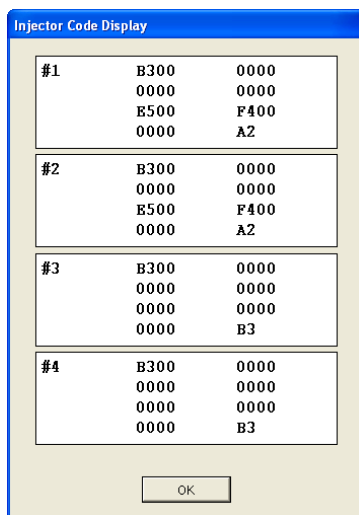
SMU-01058

3. When the dialog box shown below appears, click the [OK] button.



SMU-01090

4. The injector code is displayed. Confirm the contents to be registered and click the [OK] button.



SMU-01102



## Parking Brake System Maintenance Operation Mode

This section describes each Maintenance Operation Mode related to Parking Brake system.

### IMPORTANT:

The mode required according to performed work is shown in the following list.

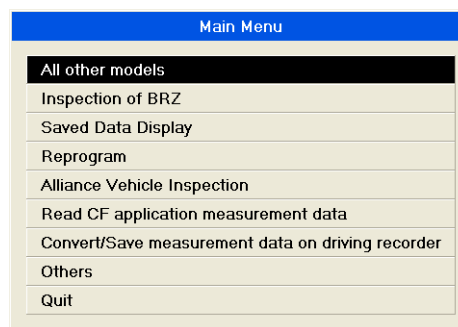
The mode or procedure in the following list must be performed, as otherwise diagnostic code detection, and other defects may be caused.

Work item	Required performing mode(s)
Parking brake control module removal	<ul style="list-style-type: none"> <li>Force Sensor Calibration Mode</li> </ul>
Parking brake control module replacement	<ul style="list-style-type: none"> <li>Force Sensor Calibration Mode</li> <li>Clutch Sensor Calibration Mode</li> </ul>
Parking brake actuator replacement	<ul style="list-style-type: none"> <li>Parking Brake Removal Mode</li> <li>Force Sensor Calibration Mode</li> <li>Clutch Sensor Calibration Mode</li> </ul>
Parking brake ASSY removal	<ul style="list-style-type: none"> <li>Parking Brake Removal Mode</li> <li>Force Sensor Calibration Mode</li> </ul>
Parking brake shoe replacement	<ul style="list-style-type: none"> <li>Parking Brake Removal Mode</li> <li>Break-in Parking Brake Drive Mode</li> <li>Force Sensor Calibration Mode</li> </ul>
Parking brake shoe clearance adjustment	<ul style="list-style-type: none"> <li>Force Sensor Calibration Mode</li> </ul>
Clutch disc replacement	<ul style="list-style-type: none"> <li>Clutch Sensor Calibration Mode</li> <li>Clutch Engagement Position Setting</li> </ul>
Clutch master cylinder ASSY replacement	<ul style="list-style-type: none"> <li>Clutch Sensor Calibration Mode</li> <li>Clutch Engagement Position Setting</li> </ul>

Work item	Required performing mode(s)
Clutch operating cylinder ASSY replacement or removal	<ul style="list-style-type: none"> <li>Clutch Sensor Calibration Mode</li> <li>Clutch Engagement Position Setting</li> </ul>
Clutch pedal replacement or position adjustment	<ul style="list-style-type: none"> <li>Clutch Sensor Calibration Mode</li> <li>Clutch Engagement Position Setting</li> </ul>
Parameter Initialization	<ul style="list-style-type: none"> <li>Force Sensor Calibration Mode</li> <li>Clutch Sensor Calibration Mode</li> </ul>

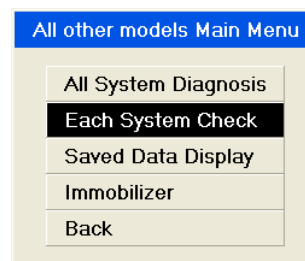
## Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



SMU-01294

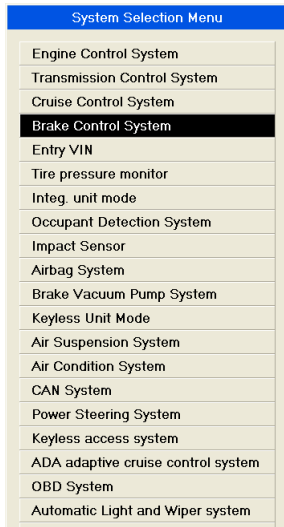
3. Select [Each System Check] at the item selection screen.



SMU-01296

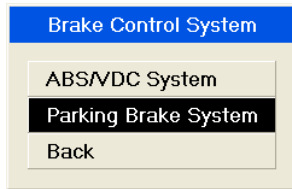


4. Select [Brake Control System] at the System Selection menu.



SMU-01195

5. Select [Parking Brake System] at the item selection screen.



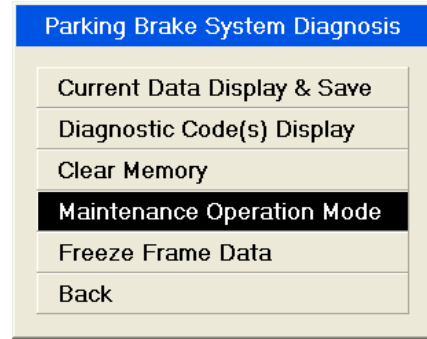
SMU-01196

6. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-01197

7. Select [Maintenance Operation Mode] at the fault diagnosis items screen.



SMU-01198

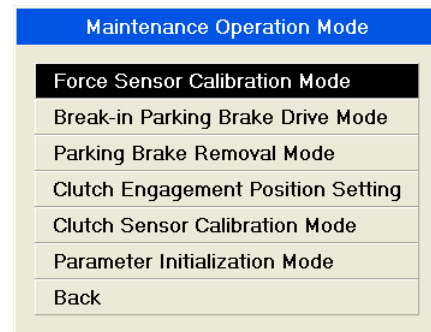
## Force Sensor Calibration Mode

Perform force sensor adjustment.

### IMPORTANT:

- Always perform [Force Sensor Calibration Mode] after performing one of below works.
  - Parking brake control module removal
  - Parking brake control module replacement
  - Parking brake actuator replacement
  - Parking brake ASSY removal
  - Parking brake shoe replacement
  - Parking brake shoe clearance adjustment
  - Parameter Initialization
- Before performing [Force Sensor Calibration Mode], stop vehicle in horizontal position and put wheel stopper for safety.

1. Select [Force Sensor Calibration Mode] at the item selection screen.

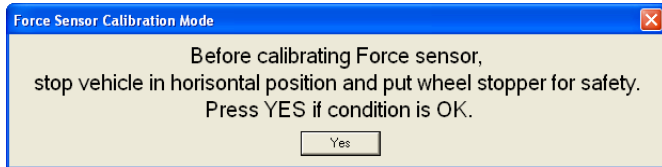


SMU-01199



2. Follow the on-screen instructions. Stop vehicle in horizontal position and put wheel stopper for safety.

Click the [Yes] button to go to the next screen.

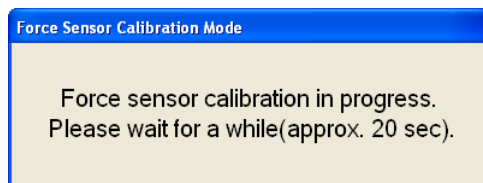


SMU-01200

#### NOTE:

If [Yes] button is not pressed within 8 seconds, it will automatically return to Maintenance Operation Mode. Select [Force Sensor Calibration Mode] again and continue performing work.

3. The following screen is displayed. Please wait.



SMU-01201

4. Follow the screen instructions and switch off the ignition switch.

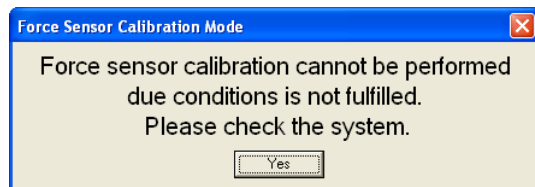
Press [Yes] button to finish work.



SMU-01202

#### NOTE:

The following screen may be displayed during the work. In that case, confirm the display contents and then click the [Yes] button.



SMU-01203

Of the contents shown above, their main causes and remedies are shown in the following chart.

Main causes of the contents shown	Remedies
<ul style="list-style-type: none"> <li>Vehicle is not in stop condition</li> </ul>	Stop vehicle in horizontal position, and perform [Force Sensor Calibration Mode] again from the beginning.
<ul style="list-style-type: none"> <li>Detection of diagnostic codes</li> </ul>	After correcting the troubles based on the diagnostic codes, perform the [Force Sensor Calibration Mode] again from the beginning.
<ul style="list-style-type: none"> <li>Power Supply Volt Error</li> </ul>	After correcting battery and power supply system harness trouble part, perform [Force Sensor Calibration Mode] again from the beginning.
<ul style="list-style-type: none"> <li>Parking Brake is operating</li> </ul>	After Parking Brake operation is finished, perform [Force Sensor Calibration Mode] again from the beginning.

## Break-in Parking Brake Drive Mode

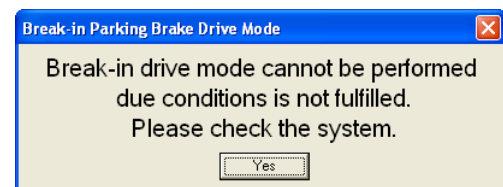
This function allows you to break-in parking brake shoe.

#### IMPORTANT:

In case of parking brake shoe replacement, always perform [Break-in Parking Brake Drive Mode] after adjusting parking brake shoe clearance.

#### NOTE:

- For the work procedure, refer to [Force Sensor Calibration Mode] of the respective item and perform the work following the screen instructions.
- The following screen may be displayed during the work. In that case, confirm the display contents and then click the [Yes] button.



SMU-01204



Of the contents shown above, their main causes and remedies are shown in the following chart.

Main causes of the contents shown	Remedies
<ul style="list-style-type: none"> <li>Vehicle is not in stop condition</li> </ul>	Stop vehicle in horizontal position, and perform [Break-in Parking Brake Drive Mode] again from the beginning.
<ul style="list-style-type: none"> <li>Detection of diagnostic codes</li> </ul>	After correcting the troubles based on the diagnostic codes, perform the [Break-in Parking Brake Drive Mode] again from the beginning.
<ul style="list-style-type: none"> <li>Power Supply Volt Error</li> </ul>	After correcting battery and power supply system harness trouble part, perform [Break-in Parking Brake Drive Mode] again from the beginning.
<ul style="list-style-type: none"> <li>Parking Brake is operating</li> </ul>	After Parking Brake operation is finished, perform [Break-in Parking Brake Drive Mode] again from the beginning.

## Parking Brake Removal Mode

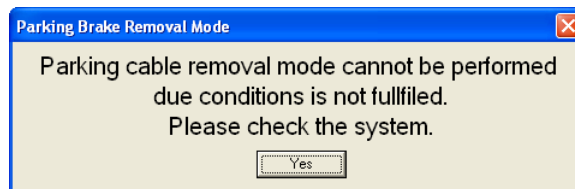
This function allows you to release parking brake cable to release position when performing parking brake disassembly.

### IMPORTANT:

- Always lift up vehicle before performing [Parking Brake Removal Mode].
- Always perform [Parking Brake Removal Mode] before performing one of below works.
  - Parking brake control module replacement
  - Parking brake actuator replacement
  - Parking brake ASSY removal
  - Parking brake shoe replacement

### NOTE:

- For the work procedure, refer to [Force Sensor Calibration Mode] of the respective item and perform the work following the screen instructions.
- The following screen may be displayed during the work. In that case, confirm the display contents and then click the [Yes] button.



SMU-01205

Of the contents shown above, their main causes and remedies are shown in the following chart.

Main causes of the contents shown	Remedies
<ul style="list-style-type: none"> <li>Vehicle is not in stop condition</li> </ul>	Stop vehicle in horizontal position, and perform [Parking Brake Removal Mode] again from the beginning.
<ul style="list-style-type: none"> <li>Detection of diagnostic codes</li> </ul>	After correcting the troubles based on the diagnostic codes, perform the [Parking Brake Removal Mode] again from the beginning.
<ul style="list-style-type: none"> <li>Power Supply Volt Error</li> </ul>	After correcting battery and power supply system harness trouble part, perform [Parking Brake Removal Mode] again from the beginning.
<ul style="list-style-type: none"> <li>Parking Brake is operating</li> </ul>	After Parking Brake operation is finished, perform [Parking Brake Removal Mode] again from the beginning.



## Clutch Engagement Position Setting

\* This function is supported only in MT models.

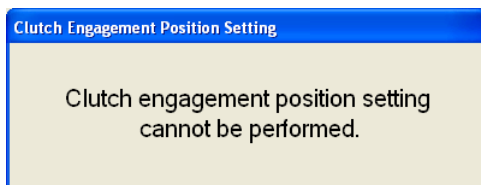
Set up clutch engagement position.

### IMPORTANT:

- Always perform [Clutch Engagement Position Setting] at horizontal and no obstacle place for safety.
- Inappropriate clutch engagement setting may cause quick release or slow release that may cause accident. Always confirm release timing connected with accel operation at safety place. Make sure neither quick release nor slow release occurs.
- Always perform [Clutch Engagement Position Setting] after performing one of below works.
  - Clutch disc replacement
  - Clutch master cylinder ASSY replacement
  - Clutch operating cylinder ASSY replacement or removal
  - Clutch pedal replacement or position adjustment

### NOTE:

- For the work procedure, refer to [Force Sensor Calibration Mode] of the respective item and perform the work following the screen instructions.
- The following screen may be displayed during the work. Return automatically to Diagnostic Menu after 5 seconds



SMU-01206

Of the contents shown above, their main causes and remedies are shown in the following chart.

Main causes of the contents shown	Remedies
<ul style="list-style-type: none"> <li>• Detection of diagnostic codes</li> </ul>	After correcting the troubles based on the diagnostic codes, perform the [Clutch Engagement Position Setting] again from the beginning.

<ul style="list-style-type: none"> <li>• Power Supply Volt Error</li> </ul>	After correcting battery and power supply system harness trouble part, perform [Clutch Engagement Position Setting] again from the beginning.
<ul style="list-style-type: none"> <li>• Parking Brake is operating</li> </ul>	After Parking Brake operation is finished, perform [Clutch Engagement Position Setting] again from the beginning.

## Clutch Sensor Calibration Mode

\* This function is supported only in MT models.

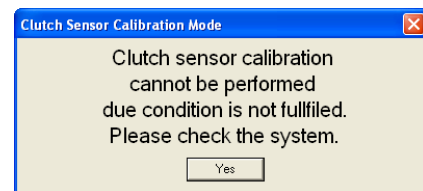
Perform clutch sensor adjustment.

### IMPORTANT:

- Always perform [Clutch Sensor Calibration Mode] after performing one of below works.
  - Parking brake control module replacement
  - Parking brake actuator replacement
  - Clutch disc replacement
  - Clutch master cylinder ASSY replacement
  - Clutch operating cylinder ASSY replacement or removal
  - Clutch pedal replacement or position adjustment
  - Parameter Initialization

### NOTE:

- For the work procedure, refer to [Force Sensor Calibration Mode] of the respective item and perform the work following the screen instructions.
- The following screen may be displayed during the work. In that case, confirm the display contents and then click the [Yes] button.



SMU-01207



Of the contents shown above, their main causes and remedies are shown in the following chart.

Main causes of the contents shown	Remedies
<ul style="list-style-type: none"> <li>Vehicle is not in stop condition</li> </ul>	Stop vehicle in horizontal position, and perform [Clutch Sensor Calibration Mode] again from the beginning.
<ul style="list-style-type: none"> <li>Detection of diagnostic codes</li> </ul>	After correcting the troubles based on the diagnostic codes, perform the [Clutch Sensor Calibration Mode] again from the beginning.
<ul style="list-style-type: none"> <li>Power Supply Volt Error</li> </ul>	After correcting battery and power supply system harness trouble part, perform [Clutch Sensor Calibration Mode] again from the beginning.
<ul style="list-style-type: none"> <li>Parking Brake is operating</li> </ul>	After Parking Brake operation is finished, perform [Clutch Sensor Calibration Mode] again from the beginning.

## Parameter Initialization Mode

This function allows you to initialize the Parking Brake system control parameters when the DTC “Parameter Selection Error” has been detected after replacing the Parking brake control module.

### IMPORTANT:

Always perform [Force Sensor Calibration Mode] and [Clutch Sensor Calibration Mode] after performing [Parameter Initialization Mode].

### NOTE:

For the work procedure, refer to [Force Sensor Calibration Mode] of the respective item and perform the work following the screen instructions.

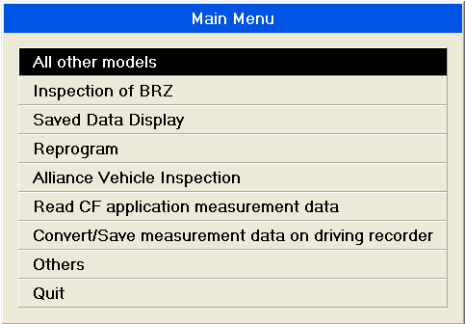


# Air Condition System

This section describes functions related to Air Condition system.

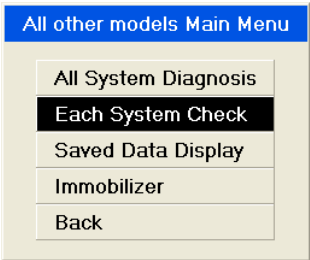
## Getting Ready

- 1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
- 2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



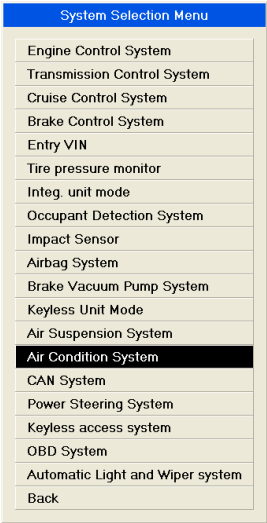
SMU-01294

- 3. Select [Each System Check] at the item selection screen.



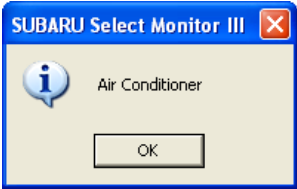
SMU-01296

- 4. Select [Air Condition System] at the System Selection menu.



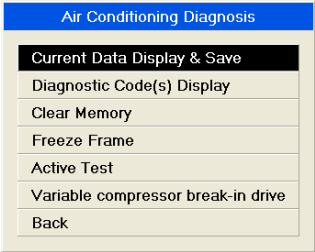
SMU-01219

- 5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-01220

- 6. From fault diagnosis menu screen, select desired item.



SMU-01221



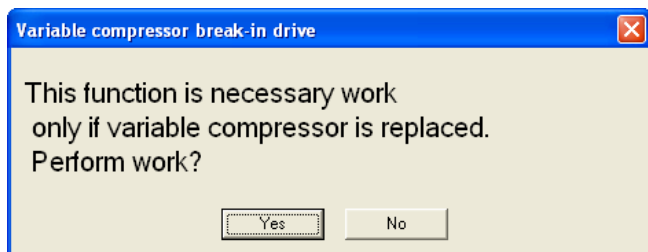
## Variable compressor break-in drive

Performing variable compressor break-in drive after replacement.

### IMPORTANT:

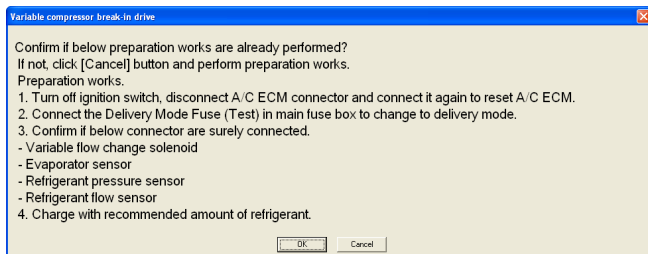
[Variable compressor break-in drive] function is necessary work only if variable compressor is replaced.

1. Performing confirmation screen will be displayed. Confirm message content and click [YES] button.



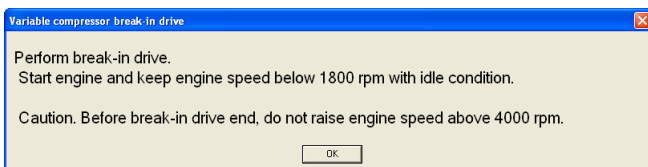
SMU-01222

2. Confirmation screen for preparation works will be displayed. Confirm preparation works, and if all preparation works are finished already, click [OK] button to proceed work.



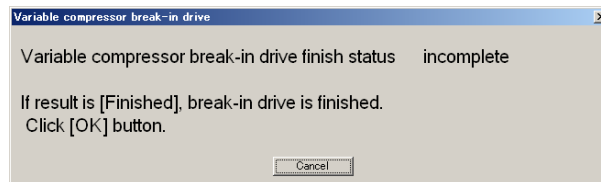
SMU-01223

3. Starting confirmation screen will be displayed. Confirm message content and click [OK] button.



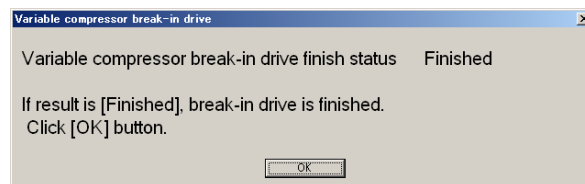
SMU-01224

4. Stand by as break-in drive performing screen is displayed.



SMU-01225

5. Break-in drive finish screen will be displayed. Click [OK] button.



SMU-01226

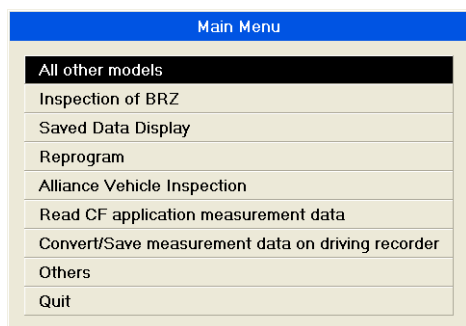


## Power Steering System

This section describes functions related to Power Steering System.

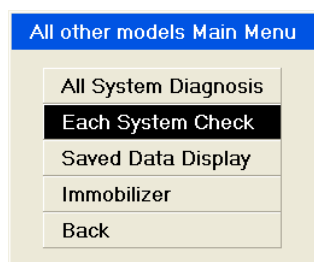
### Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



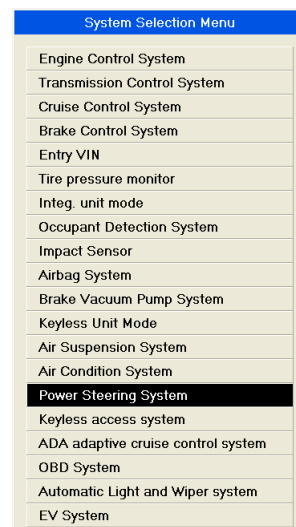
SMU-01294

3. Select [Each System Check] at the item selection screen.



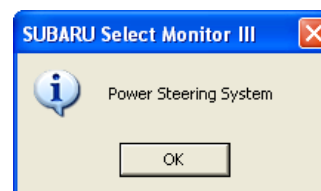
SMU-01296

4. Select [Power Steering System] at the System Selection menu.



SMU-01561

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.

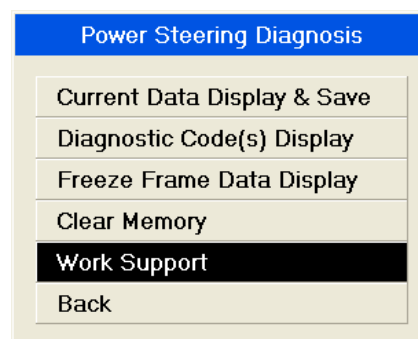


SMU-01562

### Clear Vehicle Specific Assist Map

Clear the vehicle specific assist map of power steering system.

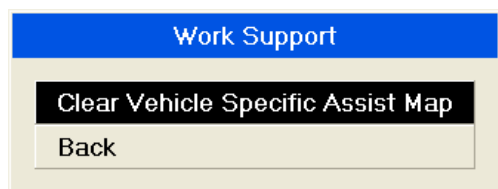
1. Select [Work Support] at the item selection screen.



SMU-01563

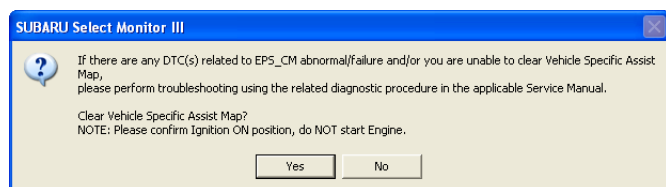


2. Select [Clear Vehicle Specific Assist Map] at the item selection screen.



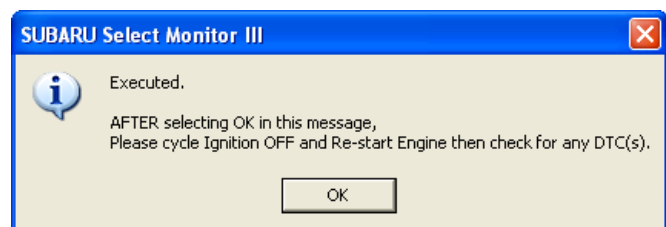
SMU-01564

3. You confirm mention contents and click [YES].



SMU-01565

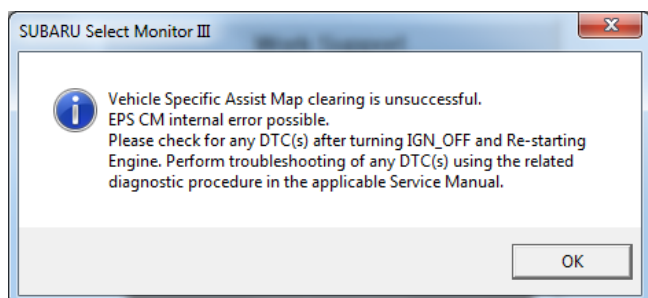
4. If clear the vehicle specific assist map successful, the following screen is displayed. Check the description, click "OK".



SMU-01566

#### NOTE:

If the following screen appears, click "OK", then perform troubleshooting and try again.



SMU-01567

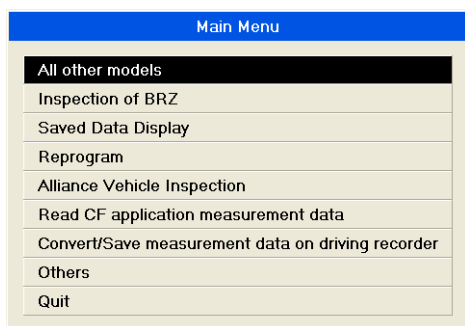


## Keyless access system

This section describes each Maintenance Operation Mode related to Keyless access system.

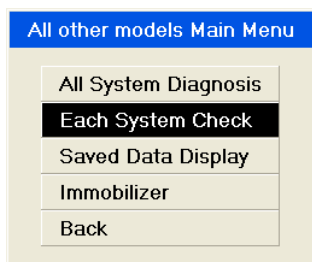
### Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



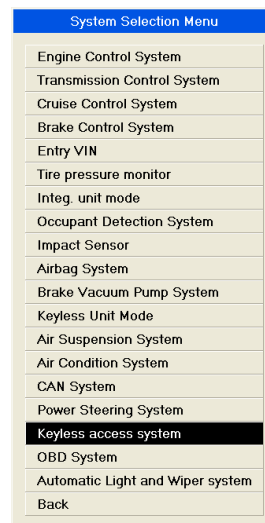
SMU-01294

3. Select [Each System Check] at the item selection screen.



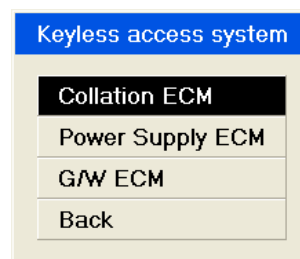
SMU-01296

4. Select [Keyless access system] at the System Selection Menu.



SMU-01209

5. Select [Collation ECM] at the item selection screen.

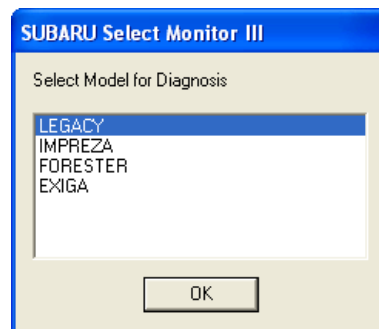


SMU-01210

#### NOTE:

This screen is not displayed by a vehicle model and specifications.

6. On Select Model for Diagnosis menu, select applicable vehicle model. (As an example, "LEGACY" is selected.)



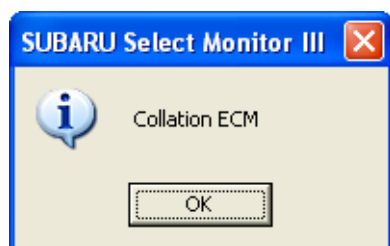
SMU-01211



**NOTE:**

This screen is not displayed by a vehicle model and specifications.

7. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-01212

**NOTE:**

This screen is not displayed by a vehicle model and specifications.

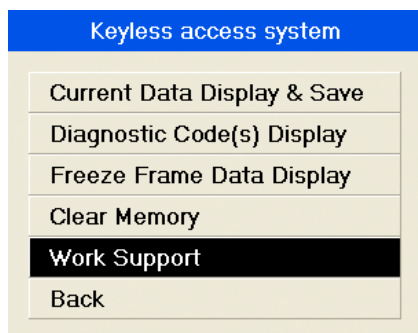
## Keyless access system check

This function allows you to confirm whether each vehicle on-board transmitter output signal is received normally by Access Key registered to vehicle.

**NOTE:**

If output signal is normally received by Access Key, buzzer will sound and Access Key LED will flash on and off.

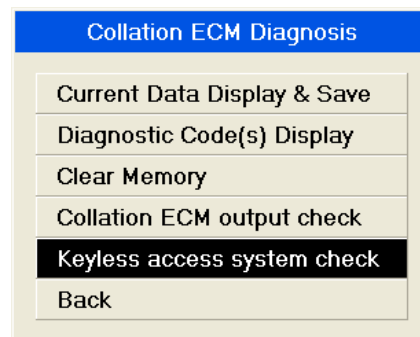
1. Select [Work Support] at the item selection screen.



SMU-01283

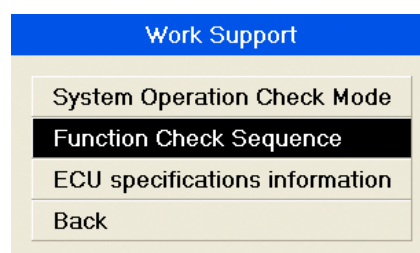
**NOTE:**

When the following screen is displayed, you choose [keyless access system check]. Please advance to step 3.



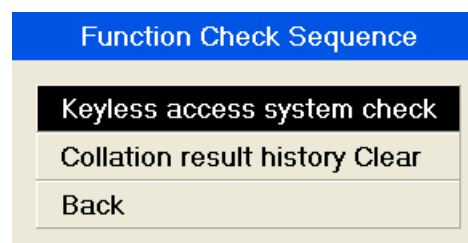
SMU-01284

2. Select [Function Check Sequence] at the item selection screen.



SMU-01285

3. Select [Keyless access system check] at the item selection screen.



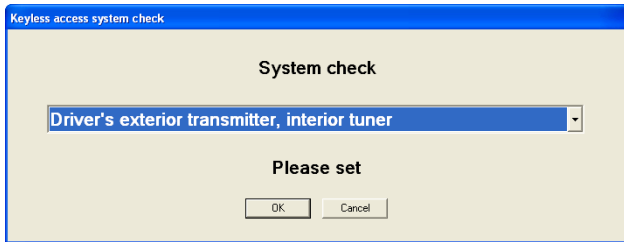
SMU-01286

**NOTE:**

The item selection screen that appears depends on vehicle model and specifications.



4. You carry out a keyless access system check.  
 You click the [OK] button after setting a tuner.  
 System check starts. (As an example, “Driver’s exterior transmitter, interior tuner” is selected.)



SMU-01287

## Collation control module output check

This function allows you to confirm each component operation such as supply power from Collation control module to tuner or vehicle on-board transmitter, and operate buzzer.

### IMPORTANT:

In order to make sure each component operate correctly, it is needed to check Collation control module output line with measuring device such as oscilloscope.

### NOTE:

For the work procedure, refer to “Keyless access system check” of the respective item and perform the work following the screen instructions.

## Collation result history Clear

This allows you to erase the past Collation result history.

### IMPORTANT:

Always execute “Collation result history Clear” after replacing tuner or vehicle on-board transmitter.

### NOTE:

For the work procedure, refer to “Keyless access system check” of the respective item and perform the work following the screen instructions.

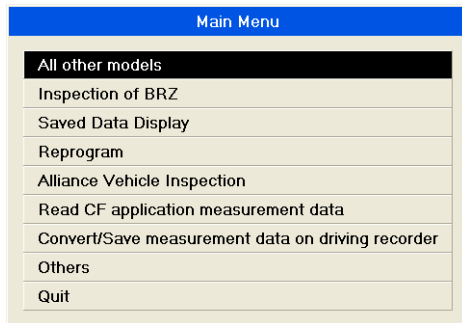


## Automatic Light and Wiper system

This section describes each Maintenance Operation Mode related to Automatic Light and Wiper system.

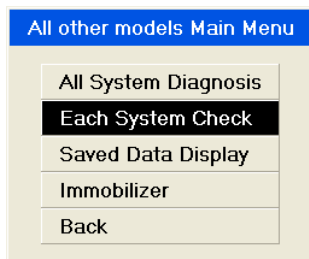
### Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



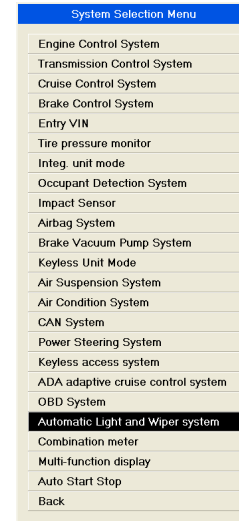
SMU-01294

3. Select [Each System Check] at the item selection screen.



SMU-01296

4. Select [Automatic Light and Wiper system] at the System Selection Menu.



SMU-01288

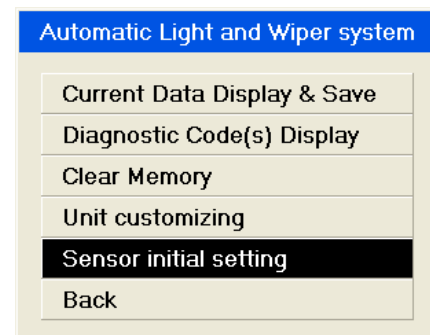
5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-01289

### Sensor initial setting

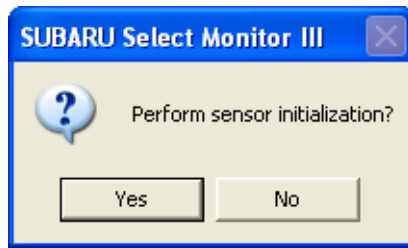
1. Select [Sensor initial setting] at the item selection screen.



SMU-01290

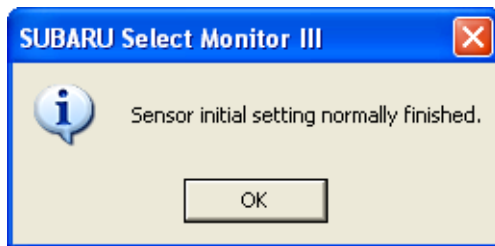


2. A confirmation screen of the sensor initial setting is displayed. You click the [YES] button and carry out initialization setting.



SMU-01291

3. When sensor initial setting is finished normally, the following screen is displayed. Click the [OK] button.



SMU-01292

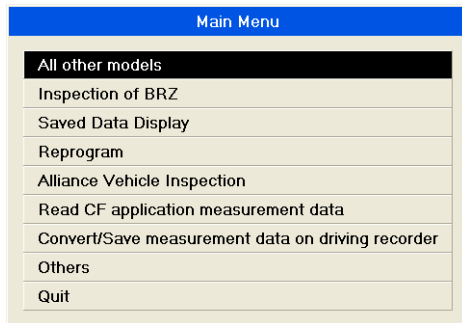


## Auto Start Stop Maintenance mode

Maintenance at the time of Auto Start Stop control module and starter assy replacement can be performed.

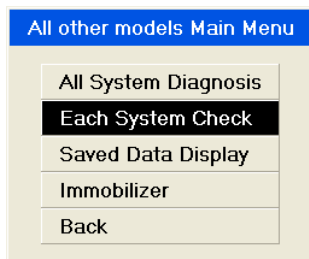
### Getting Ready

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



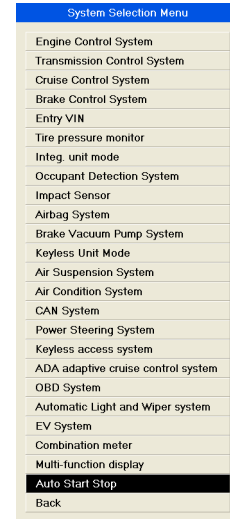
SMU-01294

3. Select [Each System Check] at the item selection screen.



SMU-01296

4. Select [Auto Start Stop] at the System Selection menu.



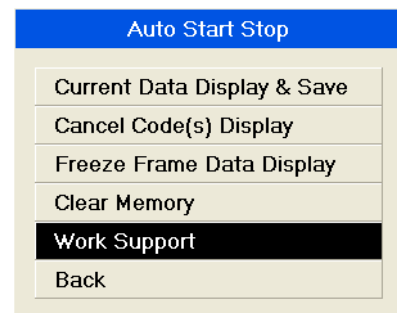
SMU-01265

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-01266

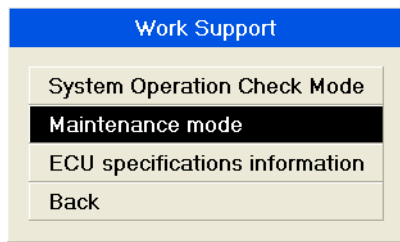
6. Select [Work Support] at the displayed main menu.



SMU-01267



7. Select [Maintenance mode] at the Work Support menu.



SMU-01268

## Maintenance at the time of starter replacement

### Start count clearing

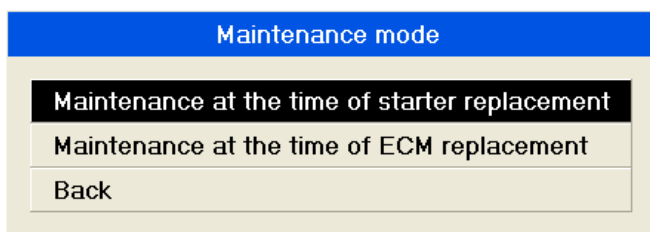
At the time of the starter assy replacement, Use this function to reset the number of engine starting (history).

#### NOTE:

At the time of starter assy replacement, always perform [Start count clearing].

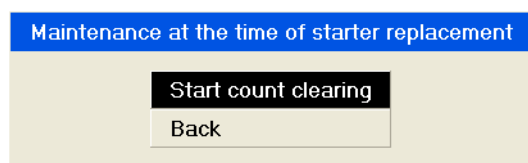
If [Start count clearing] is not performed, it will become impossible for the system to determine the correct time for starter assy replacement.

1. Select [Maintenance at the time of starter replacement] at the maintenance mode menu.



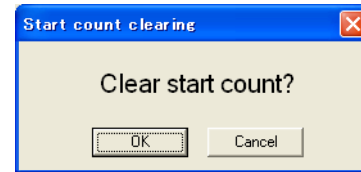
SMU-01269

2. Select [Start count clearing] at the item selection screen.



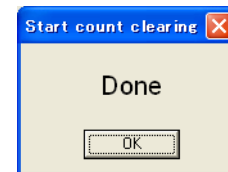
SMU-01270

3. This causes a Start count clearing confirmation message to appear. Click the [OK] button.



SMU-01271

4. The screen shown below will appear if Start count clearing ends normally. Click the [OK] button.



SMU-01272

## Maintenance at the time of control module replacement

#### NOTE:

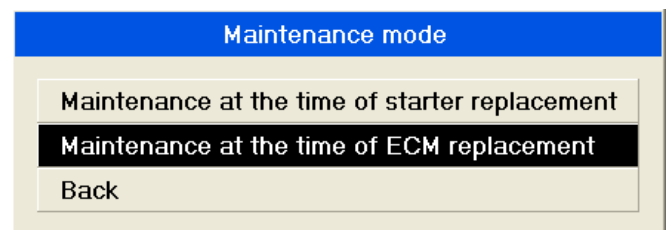
At the time of Auto Start Stop control module replacement, always perform [Maintenance at the time of ECM replacement].

If [Maintenance at the time of ECM] is not performed, it will become impossible for the system to determine the correct time for starter assy replacement.

### Start count reading control module to SSM

Before Auto Start Stop control module replacement, the number of engine starting (history) must be read and saved.

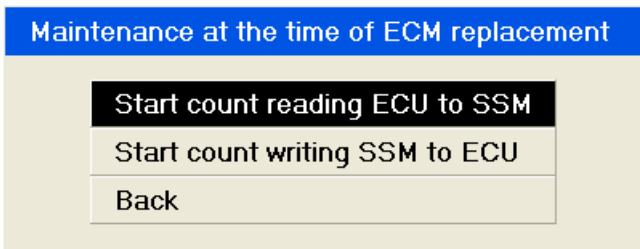
1. Select [Maintenance at the time of ECM replacement] at the maintenance mode menu.



SMU-01273

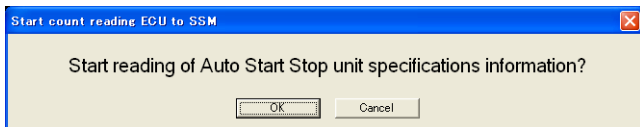


2. Select [Start count reading ECM to SSM] at the item selection screen.



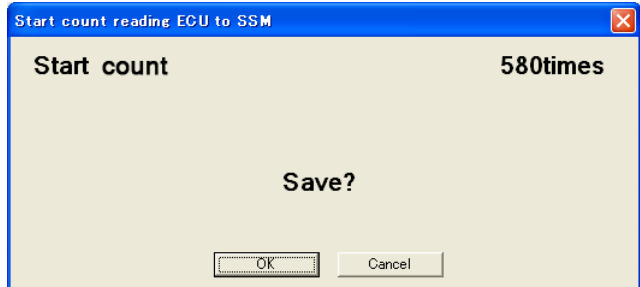
SMU-01274

3. The confirmation screen for start count reading is displayed. Click the [OK] button.



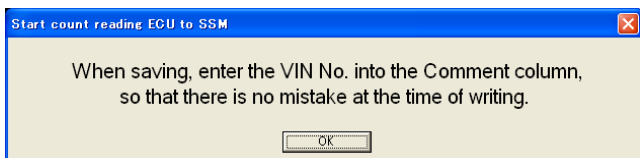
SMU-01275

4. The read data are displayed. Click the [OK] button.



SMU-01276

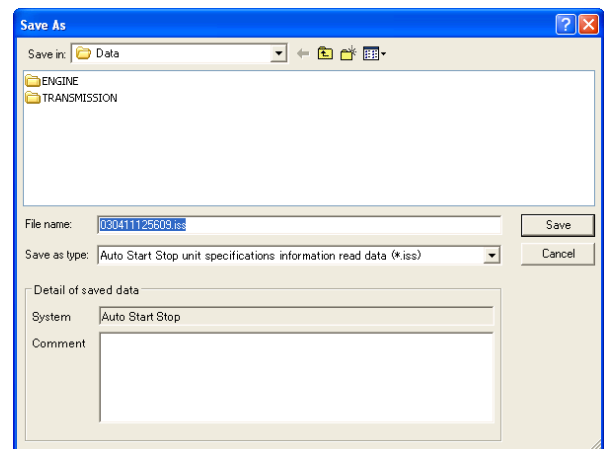
5. This displays a dialog box below. Click the [OK] button.



SMU-01277

6. This causes the sampled data save dialog box to appear. The name of the data file being saved is generated automatically in accordance with the current time and date. If you want to use the gen-

erated file name as-is, click the dialog box [Save] button. If you want to change to a different file name, type in the name you want.

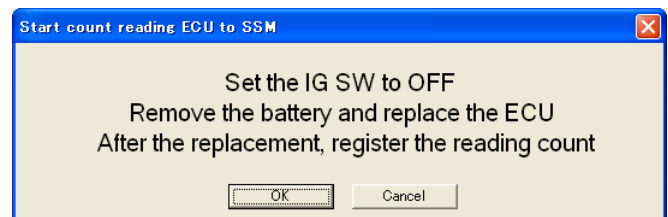


SMU-01278

#### NOTE:

- Sample data files are saved in the Data folder where the PC application is installed. To change to another storage location, specify the location you want in the Save in box of the save data dialog box.
- The Comment box of the Save As dialog box can be used to save general comments associated with the data or file.

7. The following dialog is displayed. Confirm the contents and click the [OK] button.



SMU-01279

## Start count writing SSM to control module

After replacing the Auto Start Stop control module, control module can be written to the number of engine starting (history).

#### NOTE:

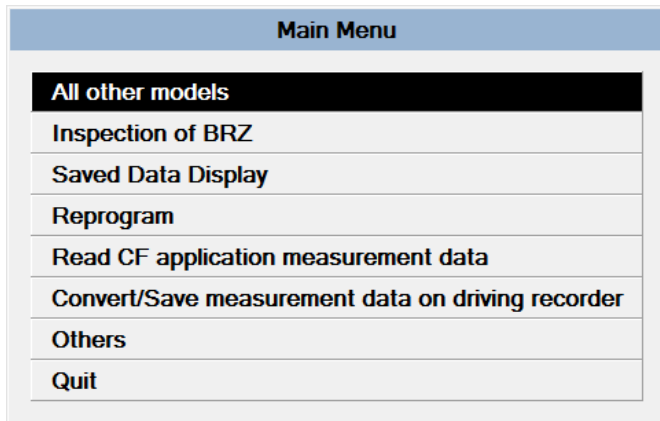
For the work procedure, refer to “Start count reading control module to SSM” of the respective item and perform the work following the screen instructions.



## Confirmation of CAN bus connection to ECU

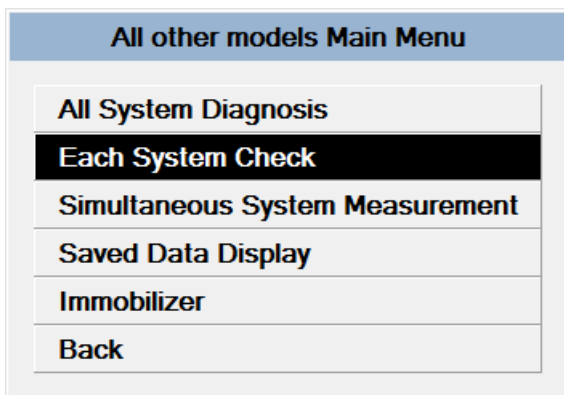
You can check the connection status of each unit.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



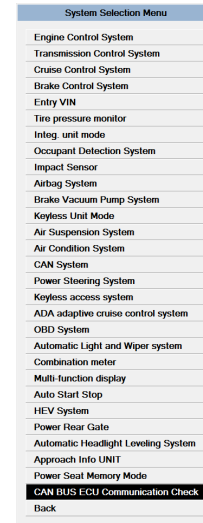
SMU-01485

3. Select [Each System Check] at the item selection screen.



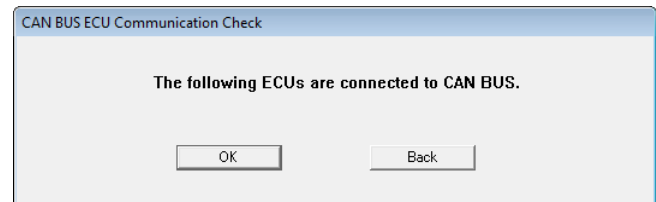
SMU-01486

4. Select [CAN BUS ECU Communication Check] at the System Selection menu.



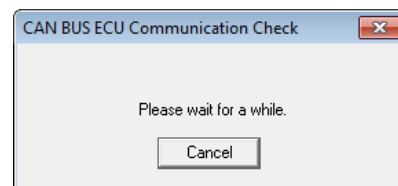
SMU-01487

5. The following screen is displayed. Confirm the display contents and then click the [OK] button.



SMU-01488

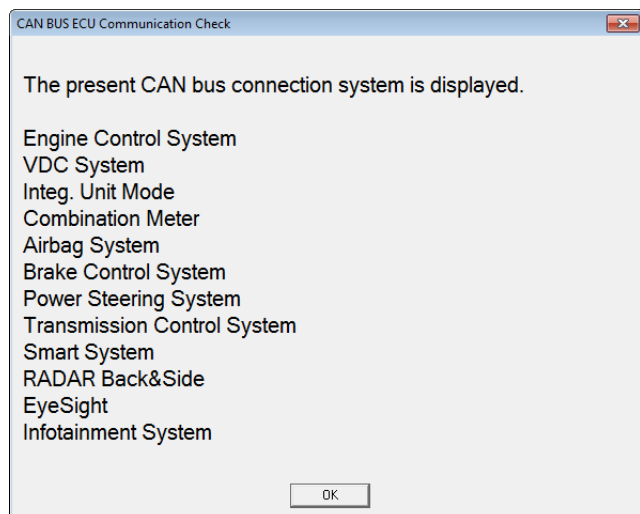
6. Stand by as the message below will appear on the screen.



SMU-01489



7. The system connected by CAN bus is displayed.  
Press [OK] button to finish work.



SMU-01490

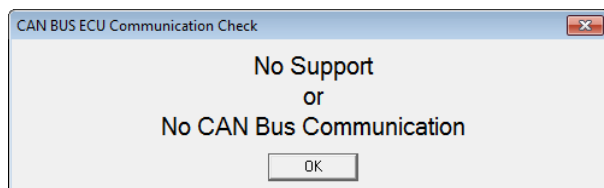
**NOTE:**

When the following screen is displayed, please check the following.

Check the specifications of the vehicle.

Check the connection of diagnostic cable.

Check the connection of the USB cable.



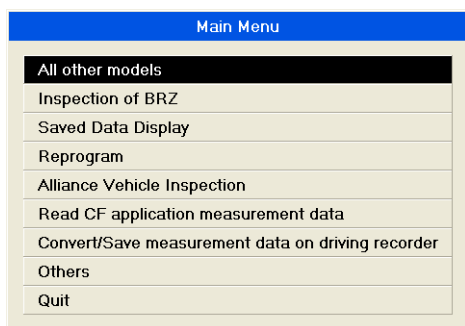
SMU-01491



## Electric Fluid Pump inspection mode

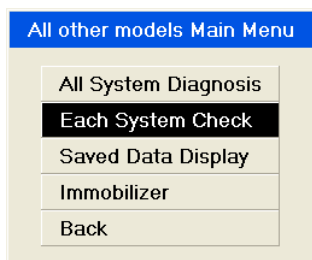
This section describes functions related to Electric Fluid Pump system inspection mode.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] at the displayed main menu.



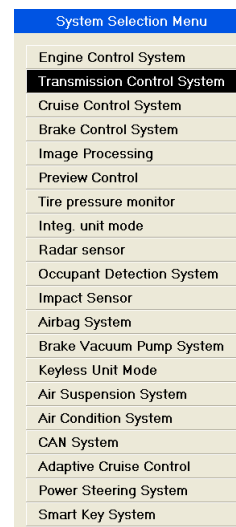
SMU-01294

3. Select [Each System Check] at the item selection screen.



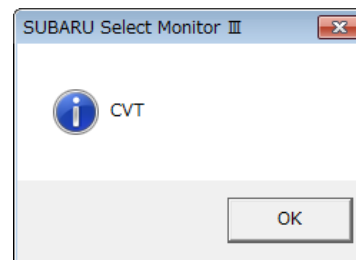
SMU-01296

4. Select [Transmission Control System] at the System Selection menu.



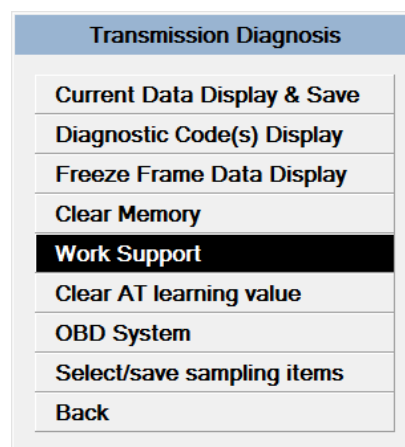
SMU-01043

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-01347

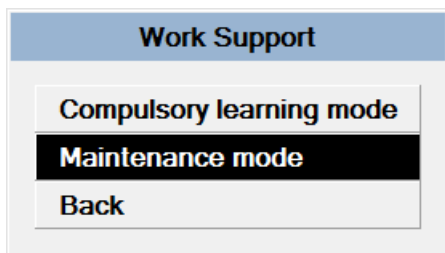
6. Select [Work Support] at the fault diagnosis items screen.



SMU-01348

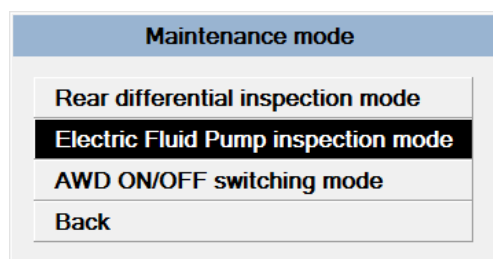


7. Select [Maintenance mode] at the item selection screen.



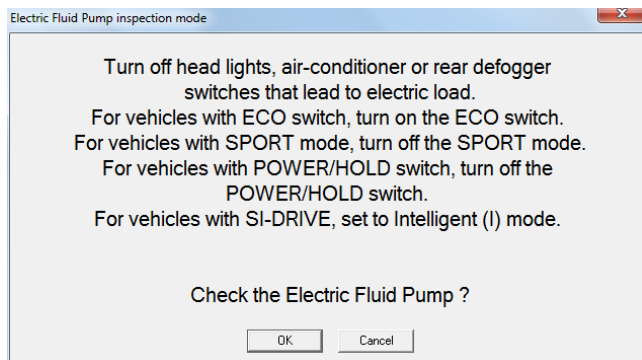
SMU-01349

8. Select [Electric Fluid Pump inspection mode] at the item selection screen.



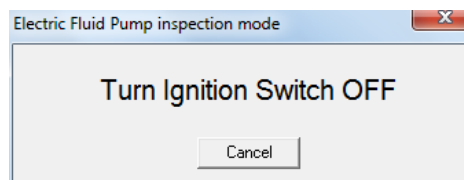
SMU-01350

9. Following the instructions that appear on the screen, setup each switch and mode. Click the [OK] button to go to the next screen.



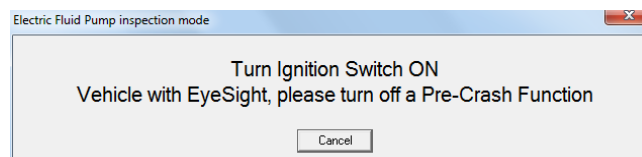
SMU-01351

10. Follow the screen instructions and switch off the ignition switch.



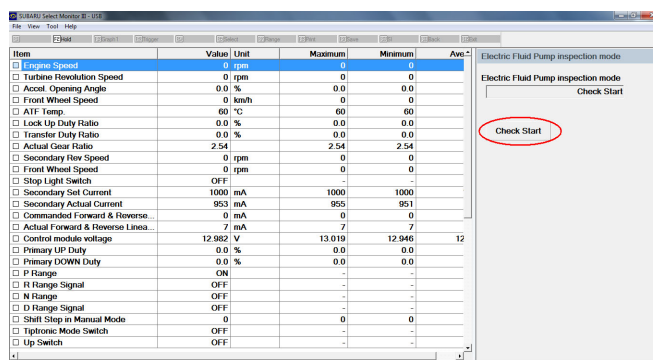
SMU-01352

11. Follow the screen instructions and switch on the ignition switch.



SMU-01353

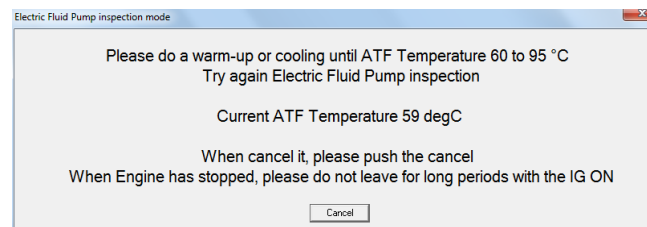
12. The following screen will be displayed. Please press the [Check start] button.



SMU-01354

#### NOTE:

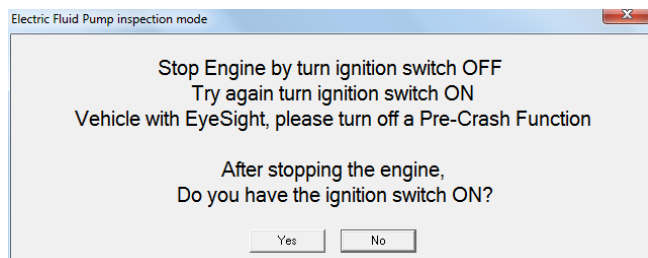
- If following message is shown, warm up or cool down engine until ATF temperature becomes as instructed on the screen. Once the ATF temperature reaches instructed temperature, the next procedure is executed automatically. To cancel learning, click the [Cancel] button.



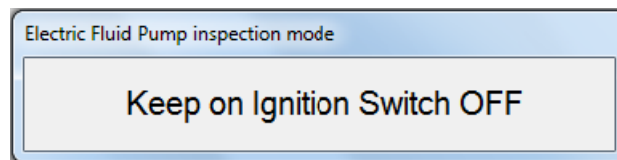
SMU-01355



- Please follow the instructions on the screen. Stop the engine with the ignition switch to OFF. Then, the ignition switch to ON again. Click the [OK] button to go to the next screen.

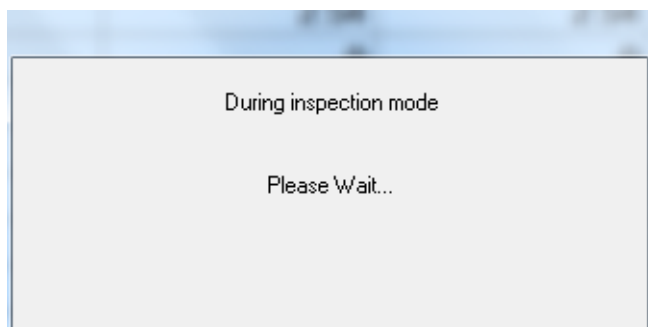


SMU-01356



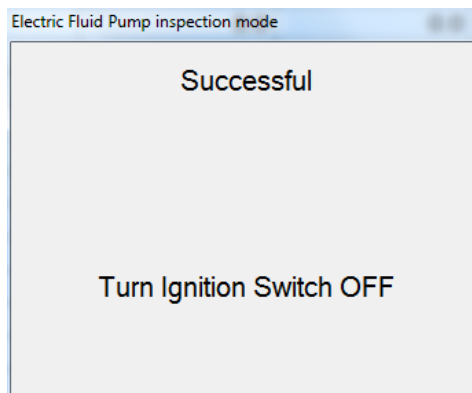
SMU-01359

13.The following screen is displayed. Please wait.



SMU-01357

14.Inspection mode is successful, the following screen will be displayed. Follow the screen instructions and switch off the ignition switch.



SMU-01358

15.The following screen is displayed. Please wait.



## SDI Driving Recorder (SDR)

In cases when the trouble that is difficult to be reproduced is occurring, the driving recorder can be used to sample vehicle data continuously and to save data. Pressing the trigger switch will save data starting from the point 10 minutes before the switch is pressed, up to the point five seconds after the switch is pressed. Saved data can be displayed for analysis.

The following are the steps for sampling and analysing data.

- 1) Create an SDR Setting File.
- 2) Sample the SDR data.
- 3) Save the sampled SDR data.
- 4) Open and analyse the saved data.

### IMPORTANT:

When the driving recorder function is used for measuring, driving is done with the diagnosis cable connected to the data link connector, and care is required so that there is no obstacle for driving. Also, the safety considerations for driving and measuring the car with attached cable must be explained sufficiently to the customer, and measuring shall be done after approval by the customer.

### NOTE:

- A CF card is required in order to sample data using the driving recorder. Prepare a CF card before starting a driving recorder operation.
- Be sure to turn off SDI power before installing a CF card into or removing a CF card from its card slot. Inserting or removing a CF card while SDI power is turned on runs the risk of damaging CF card contents.
- When using this function, always take measurements after you have created a setting file for the desired vehicle model. Measurement is not possible if the setting file stored in the CF card is for another vehicle model.
- You can carry out this function only when interface box to use is SDI.

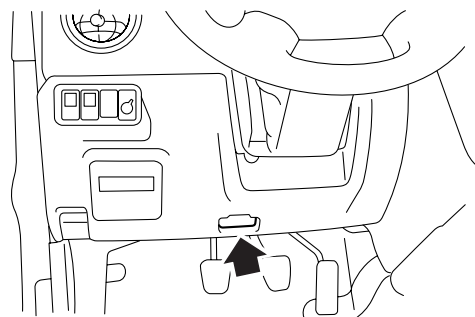
## Creating an SDR Setting File

Use the following procedure to create a setting file which selected the items to be sampled on the CF card.

1. Prepare the SDI, diagnosis cable, the USB cable, a PC with the PC application installed, and a CF card.
2. Insert the CF card into the CF1 card slot of the SDI.
3. Connect the main connector of the diagnosis cable to the diagnosis communication connector of the SDI.
4. Connect the vehicle connector of the diagnosis cable to the vehicle's data link connector, and confirm that the PWR LED of the SDI lights.

### NOTE:

SDI power will turn on automatically when the diagnosis cable is connected to the vehicle. If the PWR LED of the SDI does not light, turn on the vehicle's ignition switch or start the engine, and then press the SDI [PWR] key and check again to see if the PWR LED of the SDI lights.

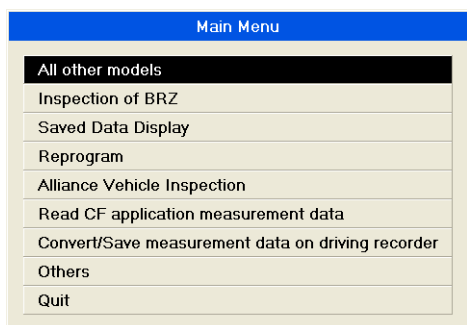


SMU-00113

5. Use the USB cable to connect the SDI to the PC.
6. Turn on the vehicle's ignition switch.
7. Double-click the SSMIII icon on the PC screen to start up the application.

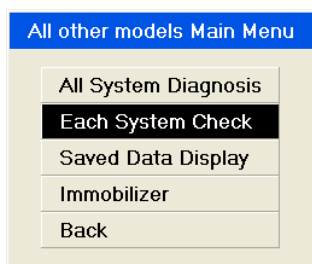


8. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



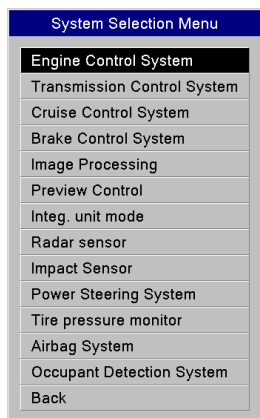
SMU-01294

9. Select [Each System Check] at the item selection screen.



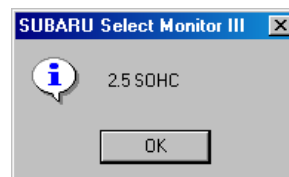
SMU-01296

10. On the System Selection Menu, select [Engine Control System] and then press the Enter key or left-click with the mouse.



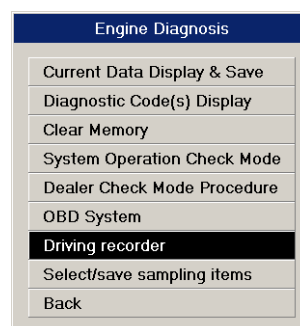
SMU-00474

11. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



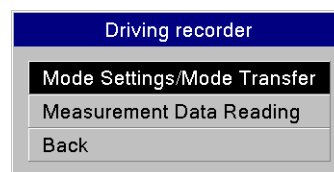
SMU-00475

12. From the list of fault diagnosis items, select [Driving recorder] and then press the Enter key or left-click with the mouse.



SMU-00609

13. On the Driving recorder menu, select [Mode Settings/Mode Transfer] and then press the Enter key or left-click with the mouse.

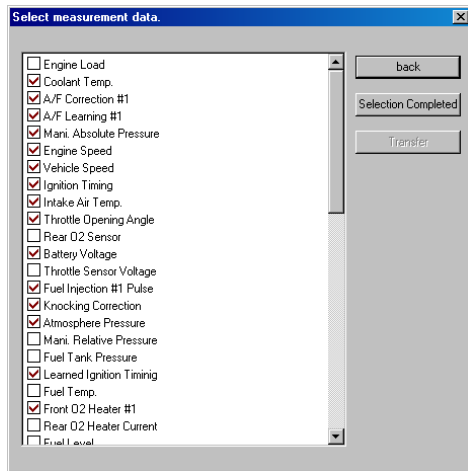


SMU-00477



14. This displays a measurement item selection screen.

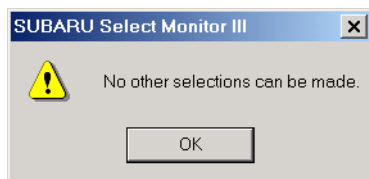
Boxes of recommended items for sampling are checked as initial settings in the screen. If you wish to add or delete some items, manipulate the boxes of applicable items. After configuring all of the settings, click the [Selection Completed] button.



SMU-00478

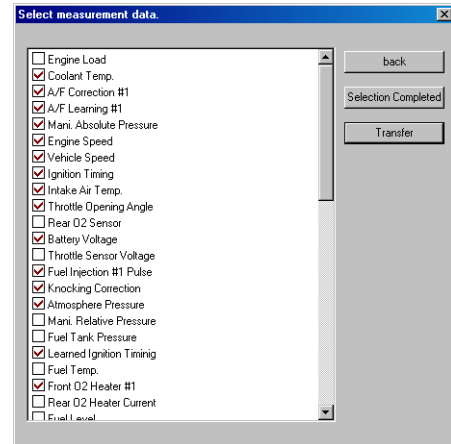
#### NOTE:

If the message dialog box shown below appears while you are selecting data items, it means that the limit on the number of selectable data items has been reached. Selection of further data items is not possible after this message appears. To select other items, deselect the check boxes next to the currently selected (checked) items, and then select the new items.



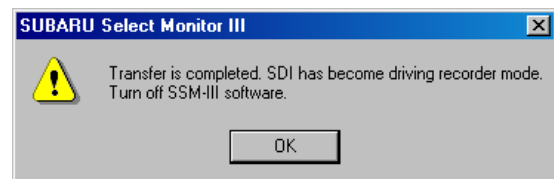
SMU-00154

15. After clicking the [Selection Completed] button, click the [Transfer] button.



SMU-00479

16. The message shown below will appear after the SDR setting file is created on the CF card in the SDI.



SMU-00480

#### NOTE:

If any message other than the one shown above appears, perform the operation as instructed by the message to create the setting file.

## Saving SDR Data to CF Card

SDR data can be saved to the CF card by pressing the [TRG] key while sampling is being performed or by pressing the trigger switch of the optional remote box.

#### NOTE:

- Be sure to turn off SDI power before installing a CF card into or removing a CF card from its card slot. Inserting or removing a CF card while SDI power is turned on runs the risk of damaging CF card contents.
- Pressing the [TRG] key will save data starting from the point 10 minutes before the key is pressed, up to the point five seconds after the key is pressed.

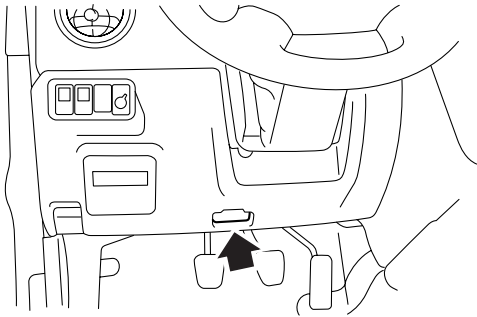
1. Insert the CF card that contains the SDR setting file into the CF1 card slot of the SDI.



2. Connect the main connector of the diagnosis cable to the diagnosis communication connector of the SDI.
3. Connect the vehicle connector of the diagnosis cable to the vehicle's data link connector, and confirm that the PWR LED of the SDI lights.

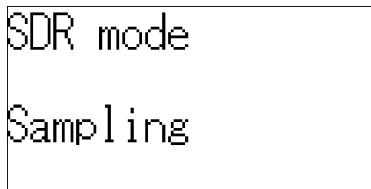
**NOTE:**

SDI power will turn on automatically when the diagnosis cable is connected to the vehicle. If the PWR LED of the SDI does not light, turn on the vehicle's ignition switch or start the engine, and then press the SDI [PWR] key and check again to see if the PWR LED of the SDI lights.



SMU-00113

4. After the SDI is turned on, sampling will start automatically and the screen shown below will appear on the SDI.

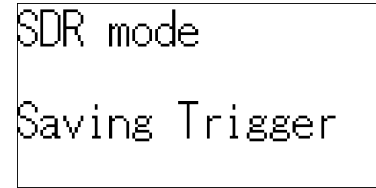


SMU-00548

**NOTE:**

- If there is no SDR Setting File on the CF card, the SDI enters the Stand-alone Mode.
  - In case that the SDI operates as a driving recorder, "SDR mode" is shown on the screen.
  - When you mark during a measurement, hold down the SDI [TRG] key or the trigger switch of the remote box for at lower than one second.
5. When sampling reaches the point you want to save, hold down the SDI [TRG] key or the trigger switch of the remote box for at least one second.

Pressing the [TRG] key or the trigger switch causes SDR data to be saved on the CF card. The message shown below appears on the SDI display when SDR data is saved on the CF card.



SMU-00549

6. Sample restarts automatically after the SDR data is saved to the CF card.

If you want to stop sampling, disconnect the diagnosis cable from the vehicle's data link connector, or hold down both the [MENU] key and the [DOWN] key of the SDI for at least two seconds in order to turn off the SDI.

**NOTE:**

To sample engine start data without Remote Box, turn the ignition switch to the ON position and keep it for a while (The engine is turned off at this moment). When the message "Sampling" appears on the SDI display, start the engine to sample the data.

## Saving SDR Data to PC

Save SDR data stored in a CF card to hard disk of your PC.

SDR data can be read from a CF card in the card slot of the SDI or in the card slot of a PC.

**NOTE:**

Be sure to turn off SDI power before installing a CF card into or removing a CF card from its card slot. Inserting or removing a CF card while SDI power is turned on runs the risk of damaging CF card contents.

## To read data from the CF card slot of the SDI

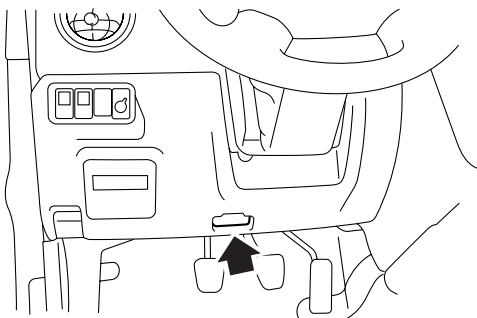
1. Insert the CF card that contains the SDR data into the CF1 card slot of the SDI.
2. Connect the main connector of the diagnosis cable to the diagnosis communication connector of the SDI.



3. Connect the vehicle connector of the diagnosis cable to the vehicle's data link connector, and confirm that the PWR LED of the SDI lights.

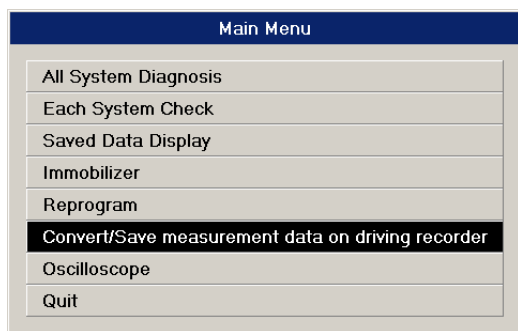
**NOTE:**

SDI power will turn on automatically when the diagnosis cable is connected to the vehicle. If the PWR LED of the SDI does not light, turn on the vehicle's ignition switch or start the engine, and then press the SDI [PWR] key and check again to see if the PWR LED of the SDI lights.



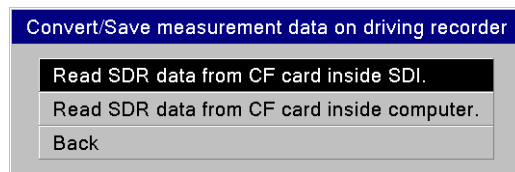
SMU-00113

4. Use the USB cable to connect the SDI to the PC.
5. Turn on the vehicle's ignition switch.
6. Double-click the SSMIII icon on the PC screen to start up the application.
7. On the Main Menu that appears on the display, select [Convert/Save measurement data on driving recorder] and then press the Enter key or left-click with the mouse.



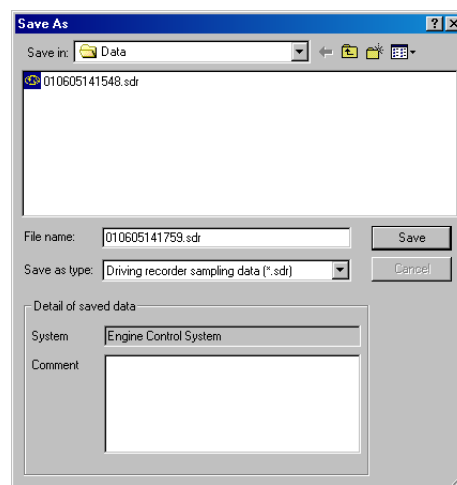
SMU-00610

8. On the Convert/Save measurement data on driving recorder screen that appears, select {Read SDR data from CF card inside SDI.} and then press the [Enter] key or left-click with the mouse.



SMU-00485

9. This causes the sampled data save dialog box to appear. The name of the data file being saved is generated automatically in accordance with the current time and date. If you want to use the generated file name as-is, click the dialog box [Save] button. If you want to change to a different file name, type in the name you want.



SMU-00700

**NOTE:**

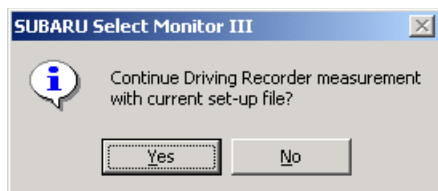
- Sample data files are saved in the Data folder where the PC application is installed. To change to another storage location, specify the location you want in the Save in box of the save data dialog box.
- The Comment box of the Save As dialog box can be used to save general comments associated with the data or file.



10. This causes the message shown below to appear.

To continue using the current setting file for sampling, click the [Yes] button.

To delete the current setting file and stop sampling, click the [No] button.



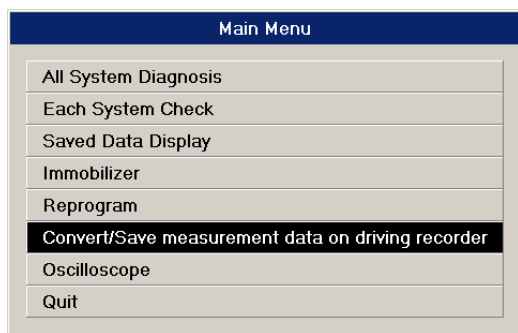
SMU-00486

## To read data from a card slot of the PC

### NOTE:

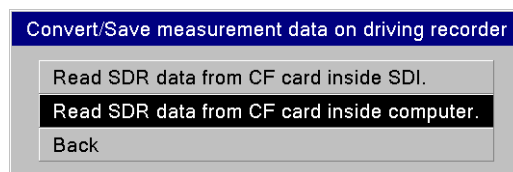
You will need to purchase a PC card adapter if your PC does not have built-in CF card slot.

1. Double-click the SSMIII icon on the PC screen to start up the application.
2. On the Main Menu that appears on the display, select [Convert/Save measurement data on driving recorder] and then press the Enter key or left-click with the mouse.



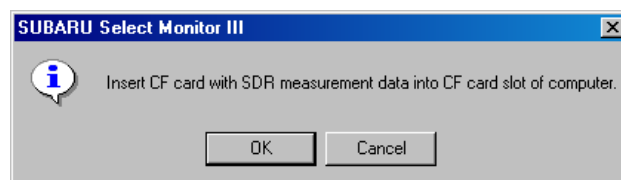
SMU-00610

3. On the Convert/Save measurement data on driving recorder screen that appears, select {Read SDR data from CF card inside computer.} and then press the [Enter] key or left-click with the mouse.



SMU-00490

4. Insert the CF card that contains the SDR sample data into the card slot of the PC. Click the [OK] button.



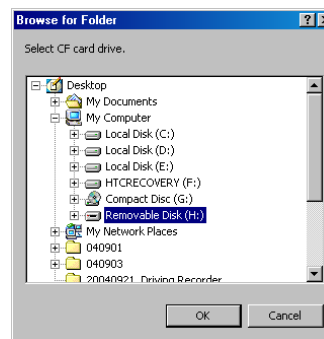
SMU-00491

5. When the dialog box shown below appears, click the [OK] button.



SMU-00492

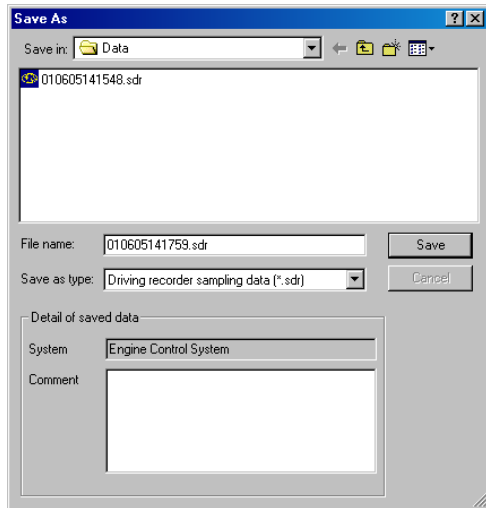
6. Select the drive where the CF card is located, and then click the [OK] button.



SMU-00493



7. This causes the sampled data save dialog box to appear. The name of the data file being saved is generated automatically in accordance with the current time and date. If you want to use the generated file name as-is, click the dialog box [Save] button. If you want to change to a different file name, type in the name you want.



SMU-00700

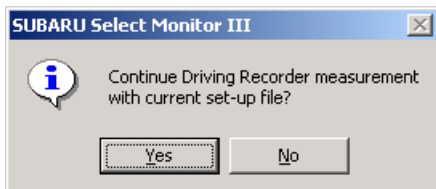
#### NOTE:

- Sample data files are saved in the Data folder where the PC application is installed. To change to another storage location, specify the location you want in the Save in box of the save data dialog box.
- The Comment box of the Save As dialog box can be used to save general comments associated with the data or file.

8. This causes the message shown below to appear.

To continue using the current setting file for sampling, click the [Yes] button.

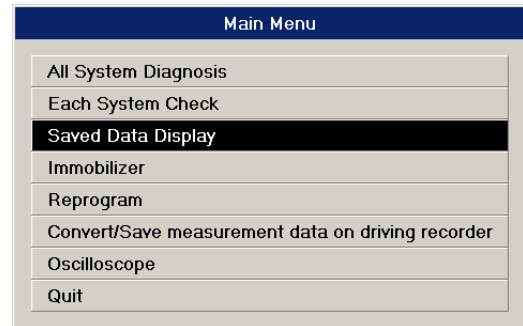
To delete the current setting file and stop sampling, click the [No] button.



SMU-00486

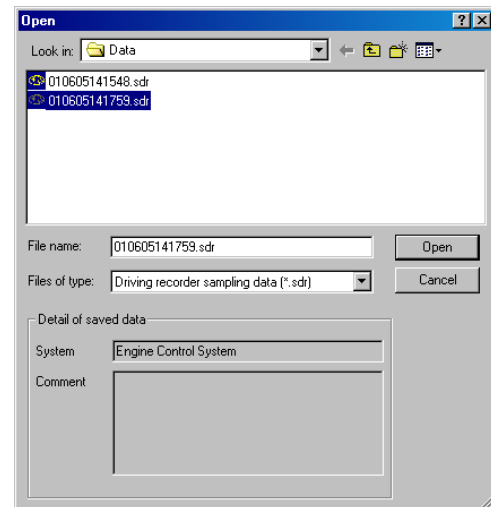
## Opening and analyzing saved data

1. Double-click the SSMIII icon on the PC screen to start up the application.
2. On the Main Menu that appears on the display, select [Saved Data Display] and then press the Enter key or left-click with the mouse.



SMU-00602

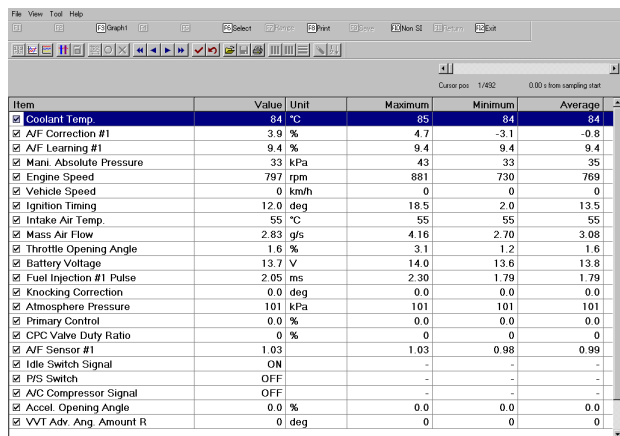
3. This displays a dialog box with a list of saved files. After selecting "Driving recorder sampling data (\*.sdr)" for "Files of type", select the file you want, and then press the [Enter] key or click the [Open] button.



SMU-00701



This recalls the data in the file and displays it on the Digital Data Screen.



Item	Value	Unit	Maximum	Minimum	Average
<input checked="" type="checkbox"/> Coolant Temp.	84	°C	85	84	84
<input checked="" type="checkbox"/> A/F Correction #1	3.9	%	4.7	-3.1	-0.8
<input checked="" type="checkbox"/> A/F Learning #1	9.4	%	9.4	9.4	9.4
<input checked="" type="checkbox"/> Mani. Absolute Pressure	33	kPa	43	33	35
<input checked="" type="checkbox"/> Engine Speed	797	rpm	881	730	769
<input checked="" type="checkbox"/> Vehicle Speed	0	km/h	0	0	0
<input checked="" type="checkbox"/> Ignition Timing	12.0	deg	18.5	2.0	13.5
<input checked="" type="checkbox"/> Intake Air Temp.	55	°C	55	55	55
<input checked="" type="checkbox"/> Mass Air Flow	2.83	g/s	4.16	2.70	3.08
<input checked="" type="checkbox"/> Throttle Opening Angle	1.6	%	3.1	1.2	1.6
<input checked="" type="checkbox"/> Battery Voltage	13.7	V	14.0	13.6	13.8
<input checked="" type="checkbox"/> Fuel Injection #1 Pulse	2.05	ms	2.30	1.79	1.79
<input checked="" type="checkbox"/> Knocking Correction	0.0	deg	0.0	0.0	0.0
<input checked="" type="checkbox"/> Atmosphere Pressure	101	kPa	101	101	101
<input checked="" type="checkbox"/> Primary Control	0.0	%	0.0	0.0	0.0
<input checked="" type="checkbox"/> CPC Valve Duty Ratio	0	%	0	0	0
<input checked="" type="checkbox"/> A/F Sensor #1	1.03		1.03	0.98	0.99
<input checked="" type="checkbox"/> Idle Switch Signal	ON		-	-	-
<input checked="" type="checkbox"/> P/S Switch	OFF		-	-	-
<input checked="" type="checkbox"/> A/C Compressor Signal	OFF		-	-	-
<input checked="" type="checkbox"/> Accel. Opening Angle	0.0	%	0.0	0.0	0.0
<input checked="" type="checkbox"/> VVT Adv. Ang. Amount R	0	deg	0	0	0

SMU-00596

#### NOTE:

The operations for this screen are identical to those described under “Saved Data Display”. See “Saved Data Display” for more information.

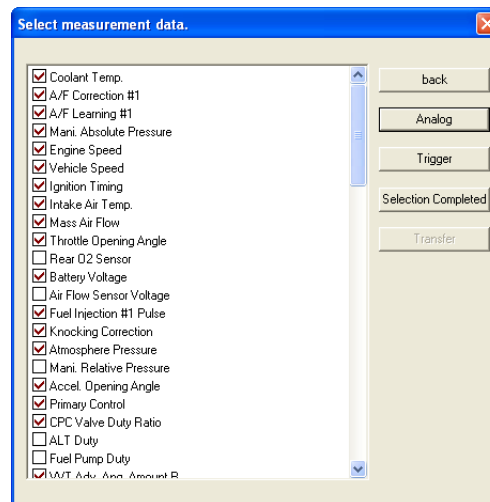
## Trigger Function

It is possible to set a trigger in advance for a sampling item, to detect the trigger automatically, and to save the sampling data automatically.

Trigger setup is performed at the time of creation of a setup file for a selected sampling item.

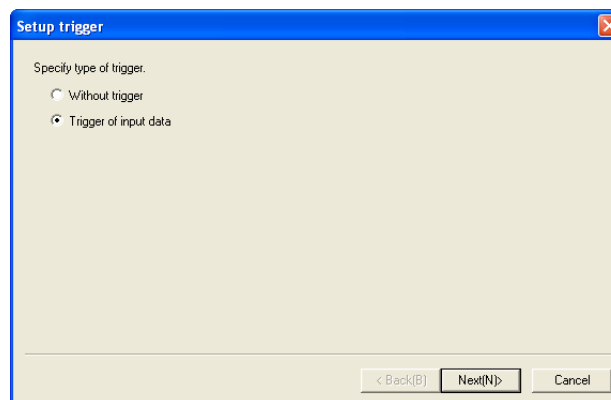
There is a trigger setting method: “Trigger of input data”, where a trigger is set in advance to a sampling item for control module data.

1. Display the sampling item selection screen, and click the “Trigger” button after item selection.



SMU-00897

2. The Setup Trigger screen is displayed. Select the “Trigger of input data” and click the [Next] button.

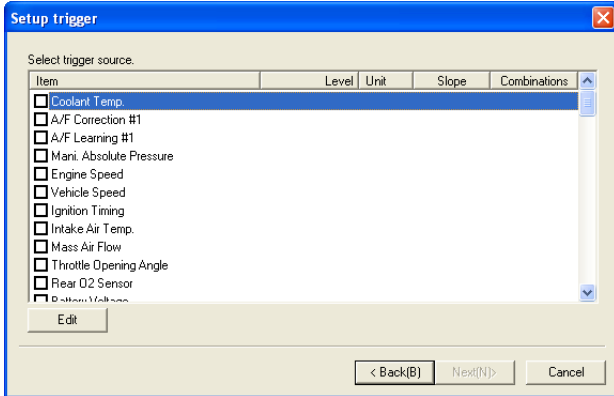


SMU-00898



### 3. Specify the trigger source.

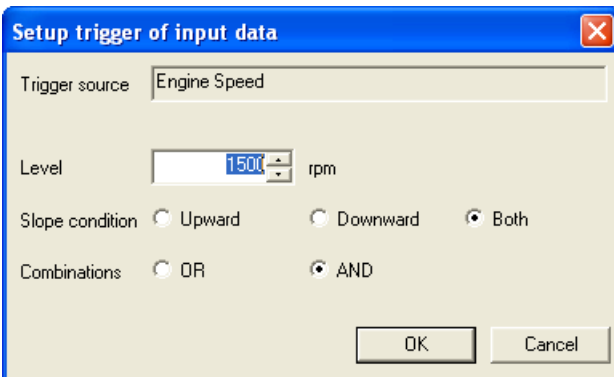
In the list, select the checkbox next to the item whose setting you want to change, or double-click the item.



SMU-00899

4. This displays the Setup trigger of input data screen. Configure the settings and then click the [OK] button.

When a sampling item is not switch input



SMU-00900

#### 1) Level

This specifies the trigger level, the value that detects triggers. You can input a value directly into the box or you can use its up and down arrows to change the setting. The setting value is limited to values that can actually be obtained. If you type in a value that cannot be obtained, the software will automatically change it to the nearest allowable value.

#### 2) Slope condition

This setting specifies the condition for trigger detection when the sample data values reach the trigger level. When [Both] is selected, a trigger is detected when either a Upward or Downward condition is first satisfied.

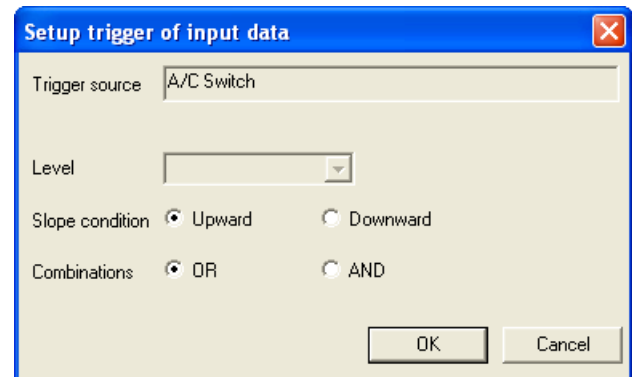
#### 3) Combinations

When there are multiple triggers, these settings can be used to configure combinations.

#### NOTE:

If you set the trigger on multiple items, unify the selection in either "OR" or "AND".

When a sampling item is switch input



SMU-00901

#### 1) Level

This specifies the trigger level, the value that detects triggers. The setting is configured by button operation. This setting cannot be selected for certain sampling items.

#### 2) Slope condition

This setting specifies the data condition for trigger detection when the sample data values reach the trigger level.

Selecting [Upward] detects a trigger at the OFF→ON point.

Selecting [Downward] detects a trigger at the ON→OFF point.

Selecting [Both] detects a trigger at either the OFF→ON point or the ON→OFF point, whichever occurs first.



### 3) Combinations

When there are multiple triggers, these settings can be used to configure Combinations.

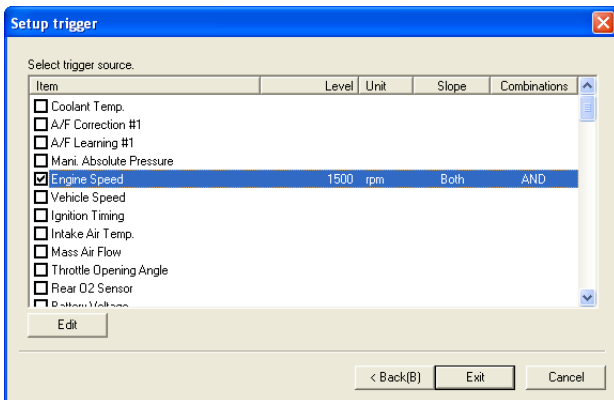
#### NOTE:

If you set the trigger on multiple items, unify the selection in either “OR” or “AND”.

5. Checkboxes of the channels to which you set triggers are checked.

If you want to configure multiple triggers, repeat steps 3 and 4.

After configuring all of the triggers you want, click the [Exit] button.



SMU-00902

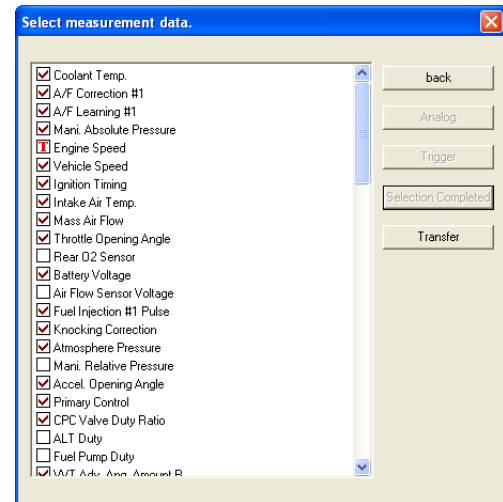
#### NOTE:

- To change a trigger setting, select the desired item and then click the [Edit] button to display the Setup trigger of input data screen.
- To exclude the setting of an item that is currently configured for a trigger, clear the check box of the applicable item.
- If the message dialog box shown below appears while you are configuring an item setting, it means that the limit on the number of selectable items has been reached. Selection of further data items is not possible after this message appears. To select other items, uncheck the unnecessary checked items of sampling items (step 1) or setup trigger items (step 3), and then select another item to which you want to assign a trigger.



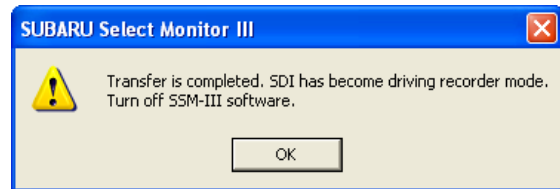
SMU-00903

6. Assigning an trigger to an item causes “T” to appear in item’s checkbox. After clicking the [Selection Completed] button, click the [Transfer] button.



SMU-00904

7. The message shown below will appear after the SDR setting file is created on the CF card in the SDI.



SMU-00905

#### NOTE:

If any message other than the one shown above appears, perform the operation as instructed by the message to create the setting file.



## DST-i Driving Recorder (SDR)

In cases when the trouble that is difficult to be reproduced is occurring, the driving recorder can be used to sample vehicle data continuously and to save data. Pressing the trigger switch will save data starting from the point 10 minutes before the switch is pressed, up to the point five seconds after the switch is pressed. Saved data can be displayed for analysis.

The following are the steps for sampling and analysing data.

- 1) Create an SDR Setting File.
- 2) Sample the SDR data.
- 3) Save the sampled SDR data.
- 4) Open and analyse the saved data.

### IMPORTANT:

- When the driving recorder function is used for measuring, driving is done with the datalink cable connected to the data link connector, and care is required so that there is no obstacle for driving. Also, the safety considerations for driving and measuring the car with attached cable must be explained sufficiently to the customer, and measuring shall be done after approval by the customer.
- When measurement is not needed, You will be sure to OFF/REC the mode switch. (Such as after the ignition switch OFF) If you left for a long time in the ON the mode switch, the battery goes up surely.

### NOTE:

- When You measure it using a driving recorder function, SD card is necessary. Please prepare beforehand.
- When you measure it using a driving recorder function, there are two methods.  
It is the way of the "Recorded in the state to the ON mode switch" and "Recorded in a state of OFF / REC mode switch".
- Be sure to turn off DST-i power before installing a SD card into or removing a SD card from its card slot. Inserting or removing a SD card while DST-i power is turned on runs the risk of damaging SD card contents.
- When using this function, always take measurements after you have created a setting file for the desired vehicle model. Measurement is not possible if the setting file stored in the SD card is for another vehicle model.

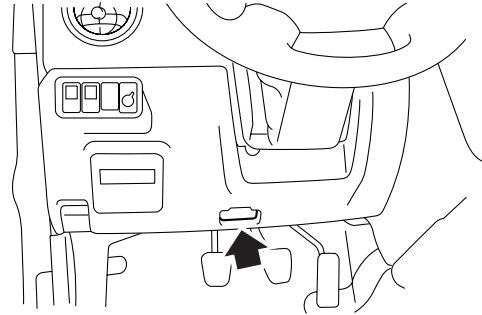
sible if the setting file stored in the SD card is for another vehicle model.

- You can carry out this function only when interface box to use is DST-i.

## Creating an SDR Setting File

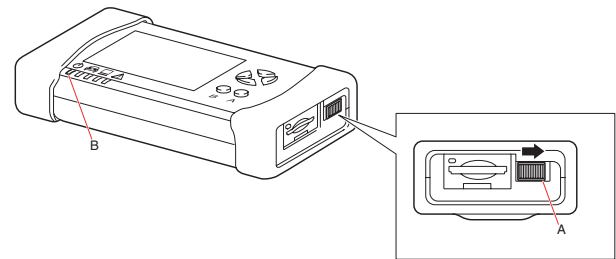
Use the following procedure to create a setting file which selected the items to be sampled on the SD card.

1. Please prepare the following.  
DST-i, datalink cable, USB cable, Personal computer ( PC app is installed ), SD card
2. Please insert the SD card into the card slot of the DST-i.
3. Use the datalink cable to connect the DST-i to the data link connector of the vehicle.



SMU-00113

4. Turn the mode switch of DST-i on, and confirm the [Power] indicator lights up in green.



SMU-01379

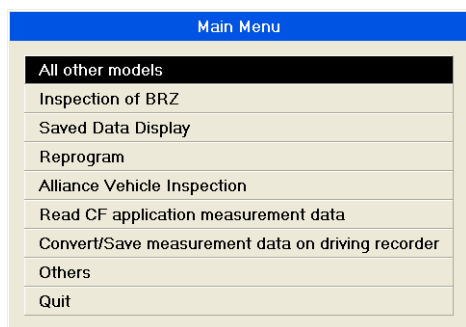
- A: Mode switch  
B: Power indicator

5. Connect DST-i and a PC with the USB cable.
6. Turn on the vehicle's ignition switch.



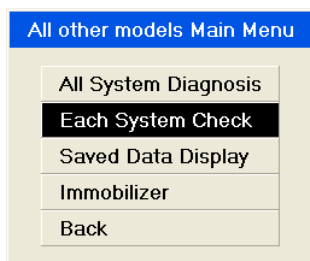
7. Double-click the SSMMIII icon on the PC screen to start up the application.

8. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



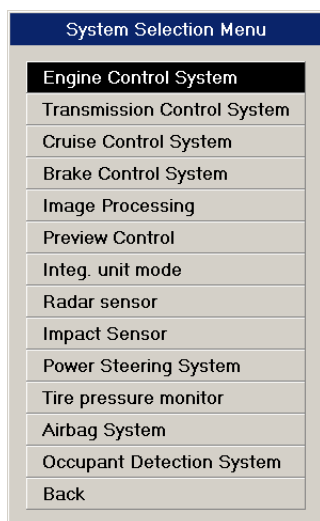
SMU-01294

9. Select [Each System Check] at the item selection screen.



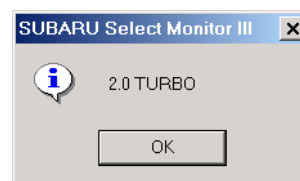
SMU-01296

10. Select [Engine Control System] at the System Selection Menu.



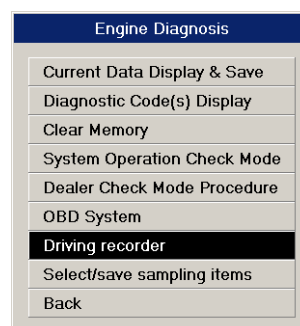
SMU-00665

11. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



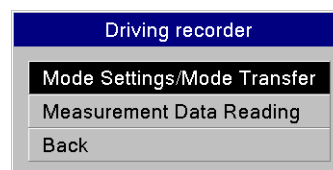
SMU-00128

12. From the list of fault diagnosis items, select [Driving recorder] and then press the Enter key or left-click with the mouse.



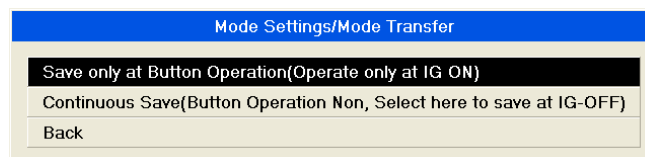
SMU-00609

13. On the Driving recorder menu, select [Mode Settings/Mode Transfer] and then press the Enter key or left-click with the mouse.



SMU-00477

14. Select [Save only at Button Operation (Operate only at IG ON)] or [Continuous Save (Button Operation Non, Select here to save at IG-OFF)] at the item selection screen. (As an example, "Save only at Button Operation (Operate only at IG ON)" is selected.)

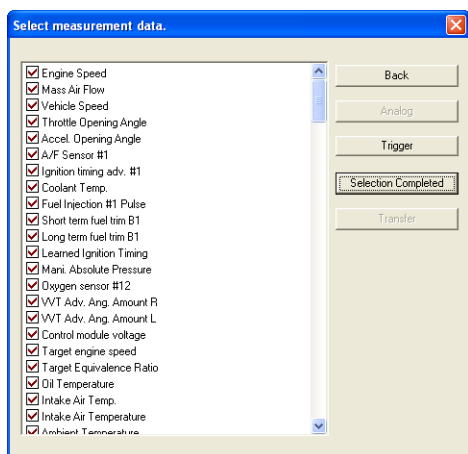


SMU-01515



15. This displays a measurement item selection screen.

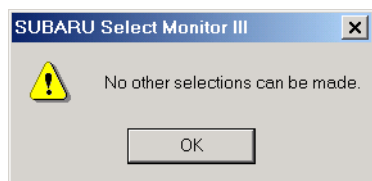
Boxes of recommended items for sampling are checked as initial settings in the screen. If you wish to add or delete some items, manipulate the boxes of applicable items. After configuring all of the settings, click the [Selection Completed] button.



SMU-01516

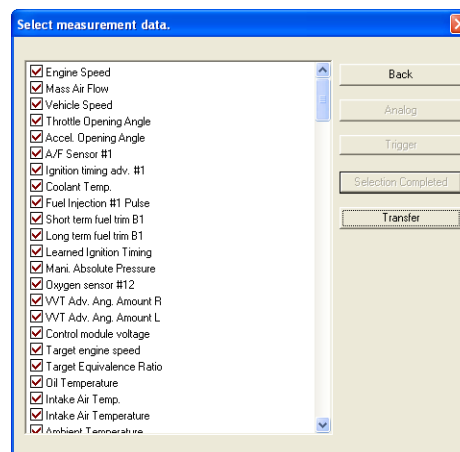
#### NOTE:

If the message dialog box shown below appears while you are selecting data items, it means that the limit on the number of selectable data items has been reached. Selection of further data items is not possible after this message appears. To select other items, deselect the check boxes next to the currently selected (checked) items, and then select the new items.



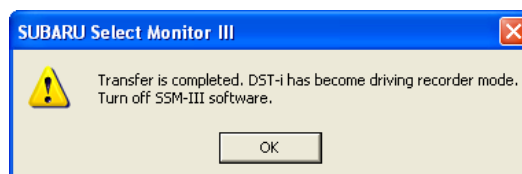
SMU-00154

16. After clicking the [Selection Completed] button, click the [Transfer] button.



SMU-01517

17. The message shown below will appear after the SDR setting file is created on the SD card in the DST-i.



SMU-01518

#### NOTE:

If any message other than the one shown above appears, perform the operation as instructed by the message to create the setting file.

## Saving SDR Data to SD Card

SDR data can be saved to the SD card by selecting [Save] in the DST-i screen and pressing the [A] key while sampling is being performed.

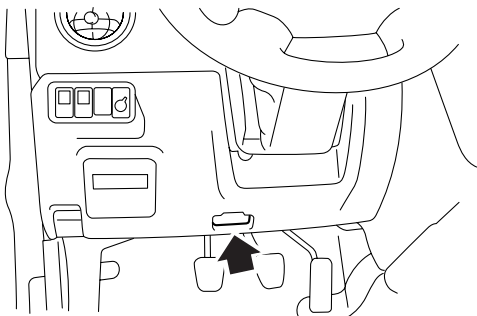
#### NOTE:

- Be sure to turn off DST-i power before installing a SD card into or removing a SD card from its card slot. Inserting or removing a SD card while DST-i power is turned on runs the risk of damaging SD card contents.
- Pressing the DST-i [A] key will save data starting from the point 10 minutes before the key is pressed, up to the point five seconds after the key is pressed.

1. Insert the SD card that contains the SDR setting file into the SD card slot of the DST-i.



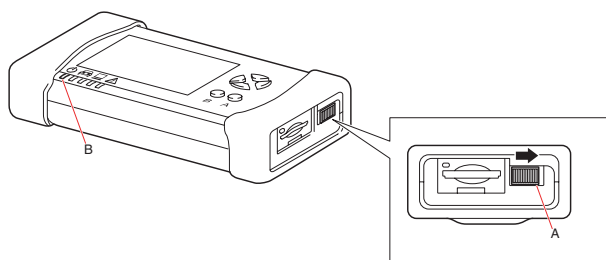
2. Use the datalink cable to connect the DST-i to the datalink connector of the vehicle.



SMU-00113

### Recorded in the state to the ON mode switch

3. Turn the mode switch of DST-i on, and confirm the [Power] indicator lights up in green.



SMU-01379

- A: Mode switch  
B: Power indicator

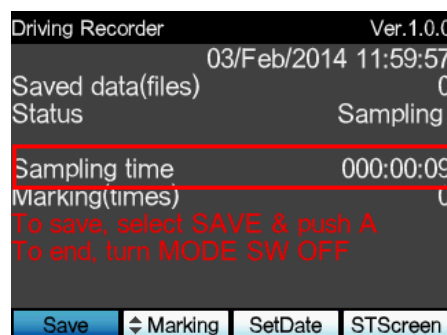
4. After the DST-i is turned on, sampling will start automatically and the screen shown below will appear on the DST-i.



SMU-01510

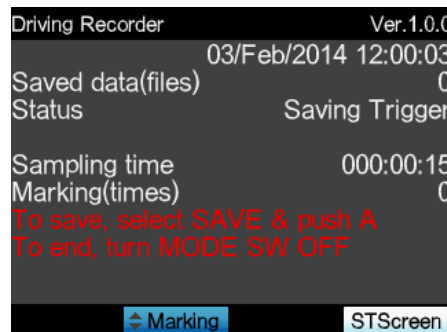
### NOTE:

- If there is no SDR Setting File on the SD card, the DST-i enters the Stand-alone Mode.
- In case that the DST-i operates as a driving recorder, "Driving Recorder" is shown on the screen.
- The followings are the explanation of displayed items in the screen.  
 Saved data (files): Displays the data saved in the SD card.  
 Status: Displays the current measurement status.  
 Sampling time: Displays the duration of measurement from the start of measurement.  
 Marking (times): Displays the number of times of marking.
- By on the screen "Sampling time" is counted, You understand that a measurement is carried out normally.007



SMU-01523

5. When sampling reaches the point you want to save, press the DST-i [A] key. Pressing the DST-i [A] key causes SDR data to be saved on the SD card. The screen shown below appears on the DST-i when SDR data is saved on the SD card.



SMU-01511

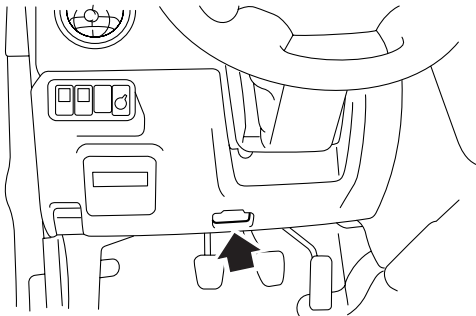


6. Sample restarts automatically after the SDR data is saved to the SD card.

If you want to stop sampling, disconnect the data-link cable from the vehicle's data link connector, or select [STScreen] in the DST-i screen and press the [A] key.

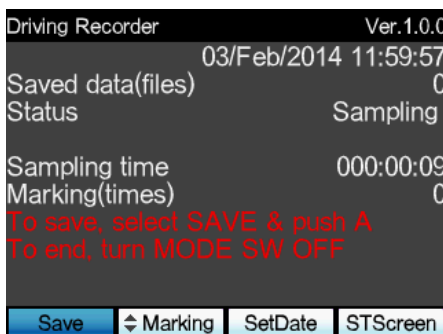
### Recorded in a state of OFF / REC mode switch

3. Connect DST-i to a vehicle with a cigar cable for DST-i.
4. Insert a datalink cable in a vehicle data link connector. Turn on an ignition switch.



SMU-00113

5. After the DST-i is turned on, sampling will start automatically and the screen shown below will appear on the DST-i.



SMU-01510

#### NOTE:

- If there is no SDR Setting File on the SD card, the DST-i enters the Stand-alone Mode.
- In case that the DST-i operates as a driving recorder, "Driving Recorder" is shown on the screen.
- The followings are the explanation of displayed items in the screen.  
 Saved data (files): Displays the data saved in the

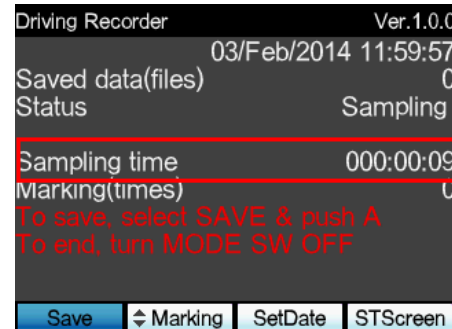
#### SD card.

Status: Displays the current measurement status.

Sampling time: Displays the duration of measurement from the start of measurement.

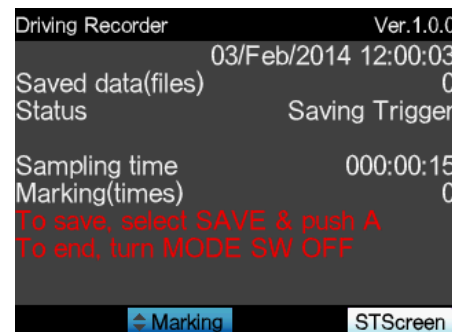
Marking (times): Displays the number of times of marking.

- By on the screen "Sampling time" is counted, You understand that a measurement is carried out normally.



SMU-01523

6. When sampling reaches the point you want to save, press the DST-i [A] key. Pressing the DST-i [A] key causes SDR data to be saved on the SD card. The screen shown below appears on the DST-i when SDR data is saved on the SD card.



SMU-01511

7. Sample restarts automatically after the SDR data is saved to the SD card.

If you want to stop sampling, disconnect the data-link cable from the vehicle's data link connector, or select [STScreen] in the DST-i screen and press the [A] key.



## Saving SDR Data to PC

Save SDR data stored in a SD card to hard disk of your PC.

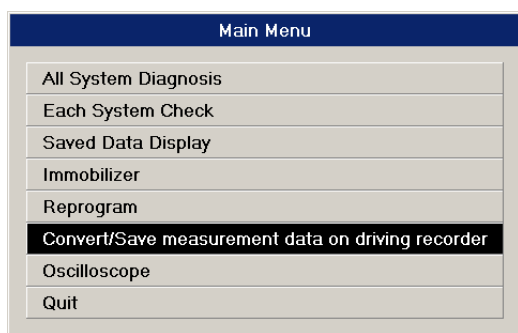
SDR data can be read from a SD card in the card slot of the DST-i or in the card slot of a PC.

### NOTE:

Be sure to turn off DST-i power before installing a SD card into or removing a SD card from its card slot. Inserting or removing a SD card while DST-i power is turned on runs the risk of damaging SD card contents.

### To read data from the SD card slot of the DST-i

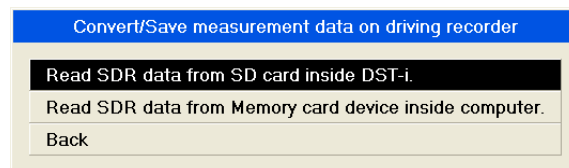
1. Insert the SD card that contains the SDR data into card slot of the DST-i.
2. Use the USB cable to connect the DST-i to the PC.
3. Turn ON the mode switch of the DST-i. Please check that the power indicator lights up.
4. Double-click the SSMIII icon on the PC screen to start up the application.
5. On the Main Menu that appears on the display, select [Convert/Save measurement data on driving recorder] and then press the Enter key or left-click with the mouse.



SMU-00610

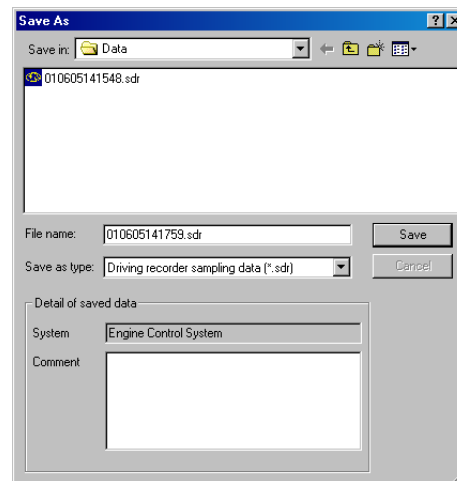
6. On the Convert/Save measurement data on driving recorder screen that appears, select [Read

SDR data from SD card inside DST-i.] and then press the [Enter] key or left-click with the mouse.



SMU-01519

7. This causes the sampled data save dialog box to appear. The name of the data file being saved is generated automatically in accordance with the current time and date. If you want to use the generated file name as-is, click the dialog box [Save] button. If you want to change to a different file name, type in the name you want.



SMU-00700

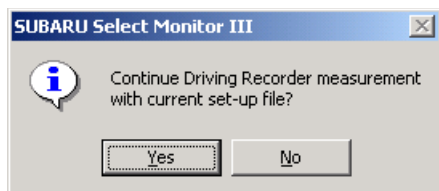
### NOTE:

- Sample data files are saved in the Data folder where the PC application is installed. To change to another storage location, specify the location you want in the Save in box of the save data dialog box.
- The Comment box of the Save As dialog box can be used to save general comments associated with the data or file.



8. This causes the message shown below to appear.

To continue using the current setting file for sampling, click the [Yes] button. To delete the current setting file and stop sampling, click the [No] button.



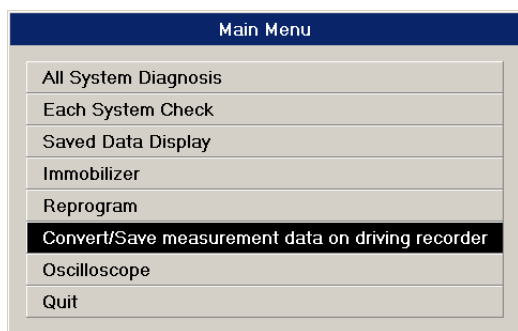
SMU-00486

## To read data from a card slot of the PC

### NOTE:

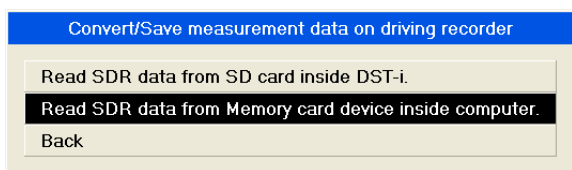
You will need to purchase a SD card reader if your PC does not have built-in SD card slot.

1. Double-click the SSMIII icon on the PC screen to start up the application.
2. On the Main Menu that appears on the display, select [Convert/Save measurement data on driving recorder] and then press the Enter key or left-click with the mouse.



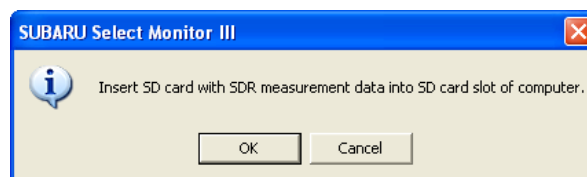
SMU-00610

3. On the Convert/Save measurement data on driving recorder screen that appears, select [Read SDR data from Memory card device inside computer.] and then press the [Enter] key or left-click with the mouse.



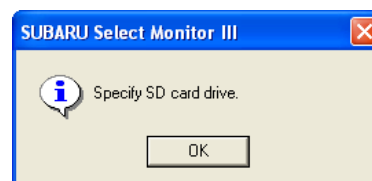
SMU-01520

4. Insert the SD card that contains the SDR sample data into the card slot of the PC. Click the [OK] button.



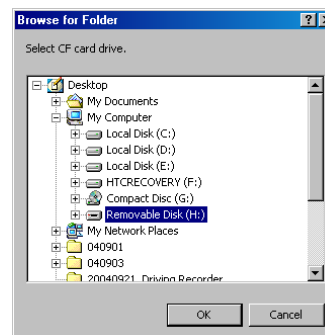
SMU-01521

5. When the dialog box shown below appears, click the [OK] button.



SMU-01522

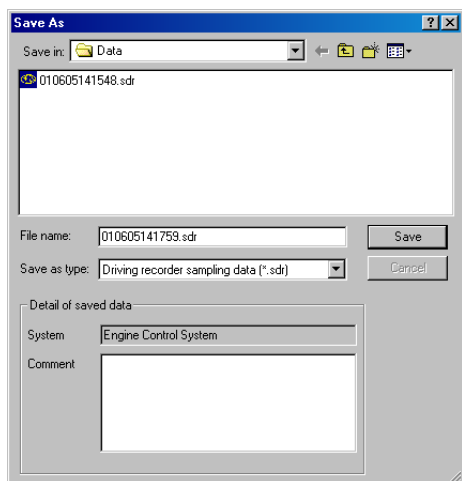
6. Select the drive where the SD card is located, and then click the [OK] button.



SMU-00493



7. This causes the sampled data save dialog box to appear. The name of the data file being saved is generated automatically in accordance with the current time and date. If you want to use the generated file name as-is, click the dialog box [Save] button. If you want to change to a different file name, type in the name you want.



SMU-00700

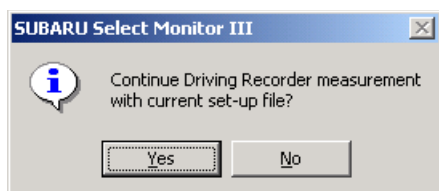
#### NOTE:

- Sample data files are saved in the Data folder where the PC application is installed. To change to another storage location, specify the location you want in the Save in box of the save data dialog box.
- The Comment box of the Save As dialog box can be used to save general comments associated with the data or file.

8. This causes the message shown below to appear.

To continue using the current setting file for sampling, click the [Yes] button.

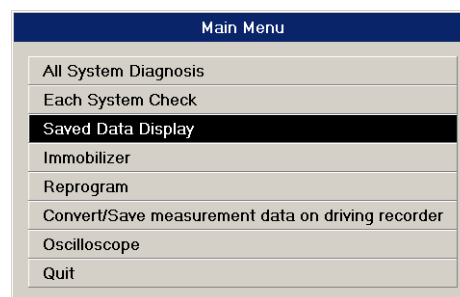
To delete the current setting file and stop sampling, click the [No] button.



SMU-00486

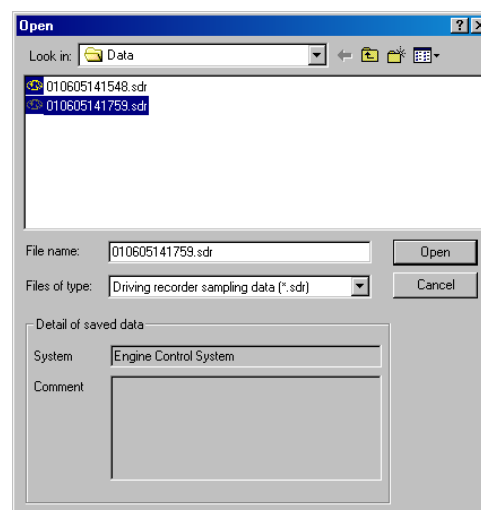
## Opening and analyzing saved data

1. Double-click the SSMIII icon on the PC screen to start up the application.
2. On the Main Menu that appears on the display, select [Saved Data Display] and then press the Enter key or left-click with the mouse.



SMU-00602

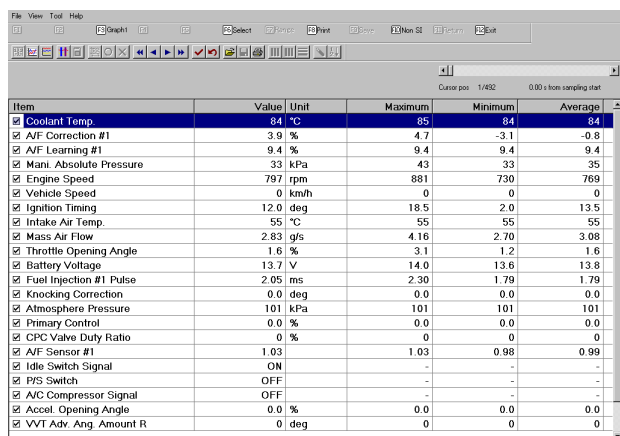
3. This displays a dialog box with a list of saved files. After selecting "Driving recorder sampling data (\*.sdr)" for "Files of type", select the file you want, and then press the [Enter] key or click the [Open] button.



SMU-00701



4. This recalls the data in the file and displays it on the Digital Data Screen.



Item	Value	Unit	Maximum	Minimum	Average
<input checked="" type="checkbox"/> Coolant Temp.	84	°C	85	84	84
<input checked="" type="checkbox"/> A/F Correction #1	3.9	%	4.7	-3.1	-0.8
<input checked="" type="checkbox"/> A/F Learning #1	9.4	%	9.4	9.4	9.4
<input checked="" type="checkbox"/> Mani. Absolute Pressure	33	kPa	43	33	35
<input checked="" type="checkbox"/> Engine Speed	797	rpm	881	730	769
<input checked="" type="checkbox"/> Vehicle Speed	0	km/h	0	0	0
<input checked="" type="checkbox"/> Ignition Timing	12.0	deg	18.5	2.0	13.5
<input checked="" type="checkbox"/> Intake Air Temp.	55	°C	55	55	55
<input checked="" type="checkbox"/> Mass Air Flow	2.83	g/s	4.16	2.70	3.08
<input checked="" type="checkbox"/> Throttle Opening Angle	1.6	%	3.1	1.2	1.6
<input checked="" type="checkbox"/> Battery Voltage	13.7	V	14.0	13.6	13.8
<input checked="" type="checkbox"/> Fuel Injection #1 Pulse	2.05	ms	2.30	1.79	1.79
<input checked="" type="checkbox"/> Knocking Correction	0.0	deg	0.0	0.0	0.0
<input checked="" type="checkbox"/> Atmosphere Pressure	101	kPa	101	101	101
<input checked="" type="checkbox"/> Primary Control	0.0	%	0.0	0.0	0.0
<input checked="" type="checkbox"/> CPC Valve Duty Ratio	0	%	0	0	0
<input checked="" type="checkbox"/> A/F Sensor #1	1.03		1.03	0.98	0.99
<input checked="" type="checkbox"/> Idle Switch Signal	ON		-	-	-
<input checked="" type="checkbox"/> P/S Switch	OFF		-	-	-
<input checked="" type="checkbox"/> A/C Compressor Signal	OFF		-	-	-
<input checked="" type="checkbox"/> Accel. Opening Angle	0.0	%	0.0	0.0	0.0
<input checked="" type="checkbox"/> VVT Adv. Ang. Amount R	0	deg	0	0	0

SMU-00596

**NOTE:**

The operations for this screen are identical to those described under "Saved Data Display". See "Saved Data Display" for more information.

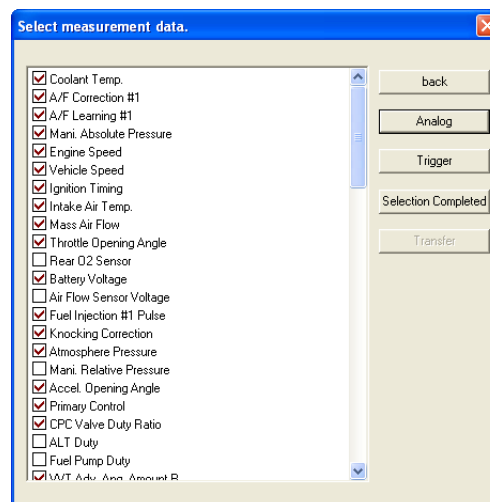
**Trigger Function**

It is possible to set a trigger in advance for a sampling item, to detect the trigger automatically, and to save the sampling data automatically.

Trigger setup is performed at the time of creation of a setup file for a selected sampling item.

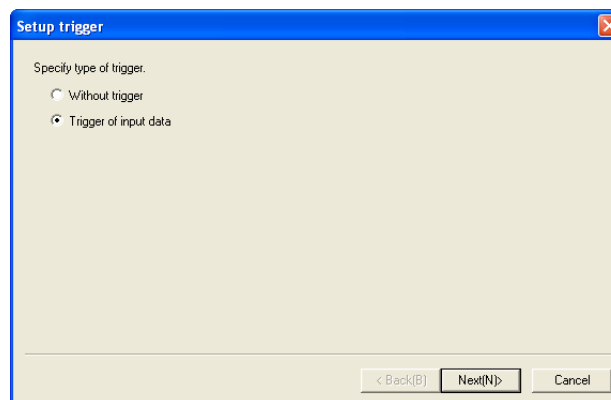
There is a trigger setting method: "Trigger of input data", where a trigger is set in advance to a sampling item for control module data.

1. Display the sampling item selection screen, and click the "Trigger" button after item selection.



SMU-00897

2. The Setup Trigger screen is displayed. Select the "Trigger of input data" and click the [Next] button.

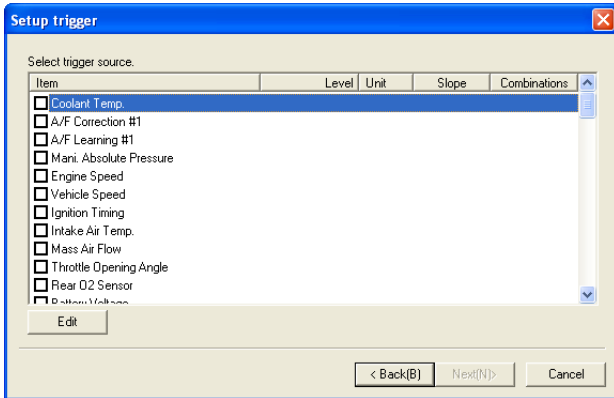


SMU-00898



### 3. Specify the trigger source.

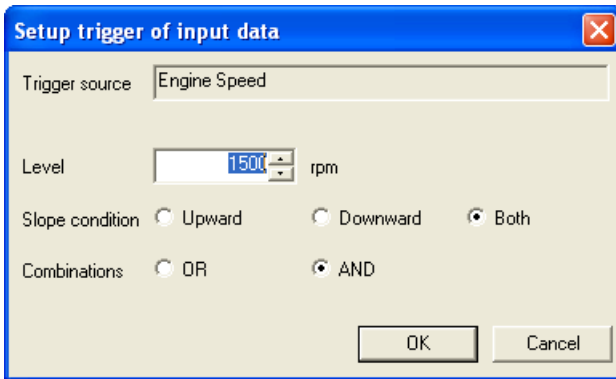
In the list, select the checkbox next to the item whose setting you want to change, or doubleclick the item.



SMU-00899

4. This displays the Setup trigger of input data screen. Configure the settings and then click the [OK] button.

### When a sampling item is not switch input



SMU-00900

#### 1) Level

This specifies the trigger level, the value that detects triggers. You can input a value directly into the box or you can use its up and down arrows to change the setting. The setting value is limited to values that can actually be obtained. If you type in a value that cannot be obtained, the software will automatically change it to the nearest allowable value.

#### 2) Slope condition

This setting specifies the condition for trigger detection when the sample data values reach the trigger

level. When [Both] is selected, a trigger is detected when either a Upward or Downward condition is first satisfied.

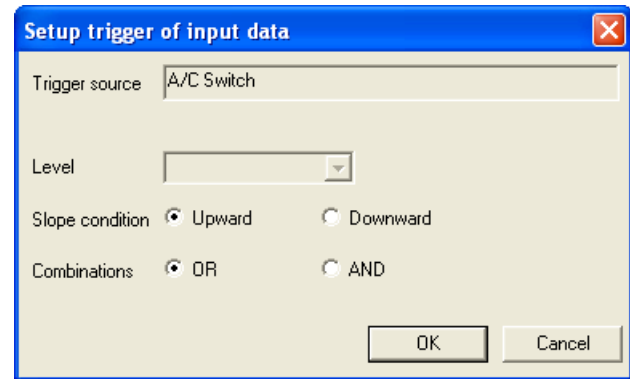
#### 3) Combinations

When there are multiple triggers, these settings can be used to configure combinations.

#### NOTE:

If you set the trigger on multiple items, unify the selection in either "OR" or "AND".

### When a sampling item is switch input



SMU-00901

#### 1) Level

This specifies the trigger level, the value that detects triggers. The setting is configured by button operation. This setting cannot be selected for certain sampling items.

#### 2) Slope condition

This setting specifies the data condition for trigger detection when the sample data values reach the trigger level.

Selecting [Upward] detects a trigger at the OFF->ON point.

Selecting [Downward] detects a trigger at the ON->OFF point.

Selecting [Both] detects a trigger at either the OFF->ON point or the ON->OFF point, whichever occurs first.

#### 3) Combinations

When there are multiple triggers, these settings can be used to configure Combinations.

#### NOTE:

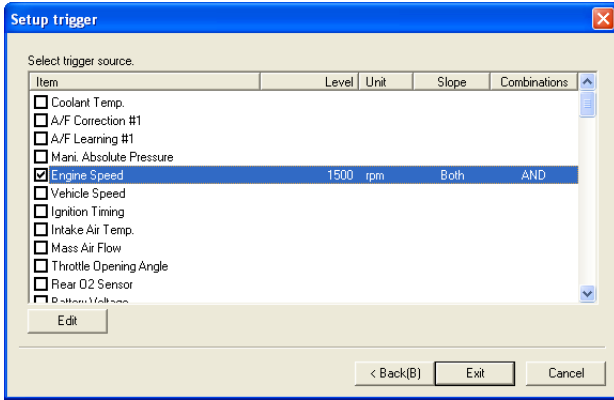
If you set the trigger on multiple items, unify the selection in either "OR" or "AND".



5. Checkboxes of the channels to which you set triggers are checked.

If you want to configure multiple triggers, repeat steps 3 and 4.

After configuring all of the triggers you want, click the [Exit] button.



SMU-00902

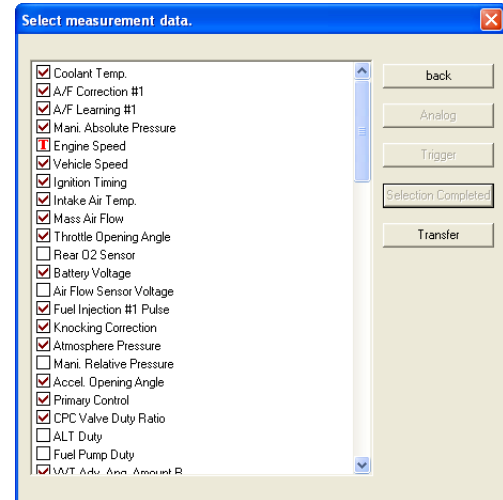
#### NOTE:

- To change a trigger setting, select the desired item and then click the [Edit] button to display the Setup trigger of input data screen.
- To exclude the setting of an item that is currently configured for a trigger, clear the check box of the applicable item.
- If the message dialog box shown below appears while you are configuring an item setting, it means that the limit on the number of selectable items has been reached. Selection of further data items is not possible after this message appears. To select other items, uncheck the unnecessary checked items of sampling items (step 1) or setup trigger items (step 3), and then select another item to which you want to assign a trigger.



SMU-00903

6. Assigning a trigger to an item causes "T" to appear in item's checkbox. After clicking the [Selection Completed] button, click the [Transfer] button.



SMU-00904

7. The message shown below will appear after the SDR setting file is created on the SD card in the DST-i.



SMU-01518

#### NOTE:

If any message other than the one shown above appears, perform the operation as instructed by the message to create the setting file.

## Date and time setting

Date and time of the DST-i built-in clock can be set.

#### NOTE:

- When leave DST-i for a long term, you can set the reset date and time.
- You write in the configuration file for SDR at an SD card. The date and time are set automatically.

1. Move to the item to set with the DST-i [RIGHT] or [LEFT] key, and set an arbitrary value with the DST-i [UP] or [DOWN] key.



2. After setting, select [UPDATE] and press the DST-i [A] key.

**NOTE:**

When you cancel setting, please datalink cable disconnect from a vehicle data link connector, or select "STScreen" in DST-I and please push the [A] key.



SMU-01512



## SDI Control Module Analog Simultaneous Measurement (SDR)

Also in driving recorder, analog data and control module data can be sampled simultaneously using the Pulse/Analog Kit (option).

The following are the steps for sampling and analysing data.

- 1) Create an SDR Setting File.
- 2) Sample the SDR data.
- 3) Save the sampled SDR data.
- 4) Open and analyse the saved data.

Basic procedure of control module Analog Simultaneous Measurement in driving recorder is the same as that in driving recorder. Therefore, this section describes only "Creating an SDR setting file" and "Saving SDR Data to CF Card". For other procedures, see the "SDI Driving Recorder (SDR)".

### NOTE:

- This function cannot be used if the pulse/analog cartridge is not installed.
- See "SDI Analog Sampling" for handling precautions about Pulse/Analog Kit, how to install the pulse/analog cartridge in the SDI and how to upgrade the SDI firmware.
- A CF card with the CF application installed is required in order to sample data using this function. Prepare a CF card before starting an operation.
- Be sure to turn off SDI power before installing a CF card into or removing a CF card from its card slot. Inserting or removing a CF card while SDI power is turned on runs the risk of damaging CF card contents.
- When using this function, always take measurements after you have created a setting file for the desired vehicle model. Measurement is not possible if the setting file stored in the CF card is for another vehicle model.
- You can carry out this function only when interface box to use is SDI.

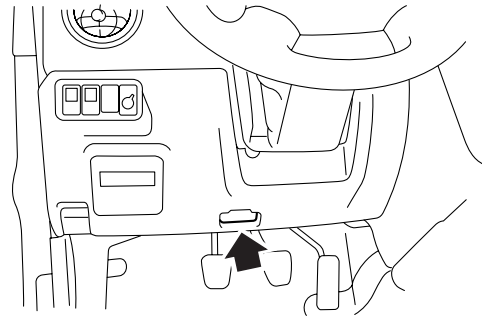
## Creating an SDR Setting File

Use the following procedure to create a setting file which selected the items to be sampled on the CF card.

1. Prepare the SDI, diagnosis cable, the USB cable, a PC with the PC application installed, and a CF card.
2. Insert the CF card into the CF1 card slot of the SDI.
3. Connect the main connector of the diagnosis cable to the diagnosis communication connector of the SDI.
4. Connect the vehicle connector of the diagnosis cable to the vehicle's data link connector, and confirm that the PWR LED of the SDI lights.

### NOTE:

SDI power will turn on automatically when the diagnosis cable is connected to the vehicle. If the PWR LED of the SDI does not light, turn on the vehicle's ignition switch or start the engine, and then press the SDI [PWR] key and check again to see if the PWR LED of the SDI lights.

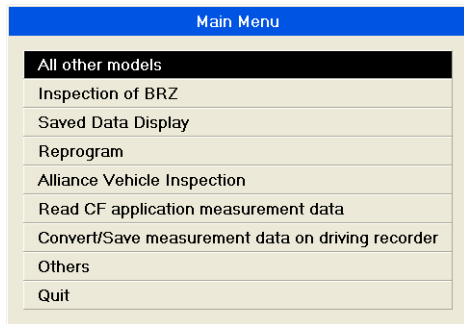


SMU-00113

5. Use the USB cable to connect the SDI to the PC.
6. Turn on the vehicle's ignition switch.
7. Double-click the SSMIII icon on the PC screen to start up the application.

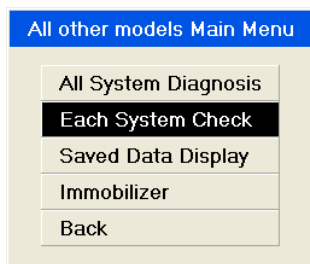


8. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



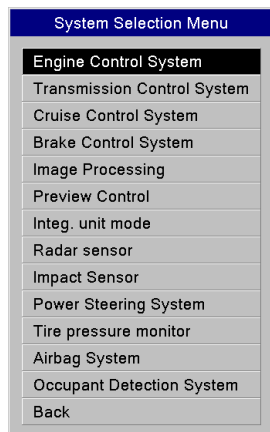
SMU-01294

9. Select [Each System Check] at the item selection screen.



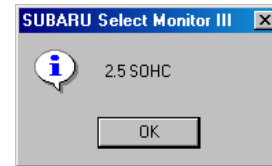
SMU-01296

10. On the System Selection Menu, select [Engine Control System] and then press the Enter key or left-click with the mouse.



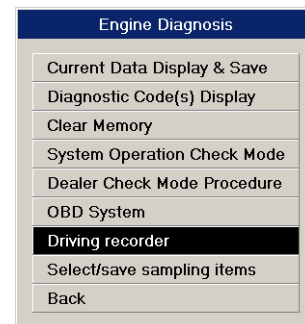
SMU-00474

11. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



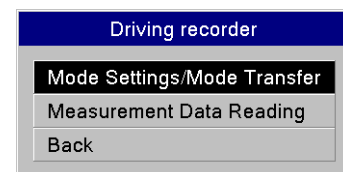
SMU-00475

12. From the list of fault diagnosis items, select [Driving recorder] and then press the Enter key or left-click with the mouse.



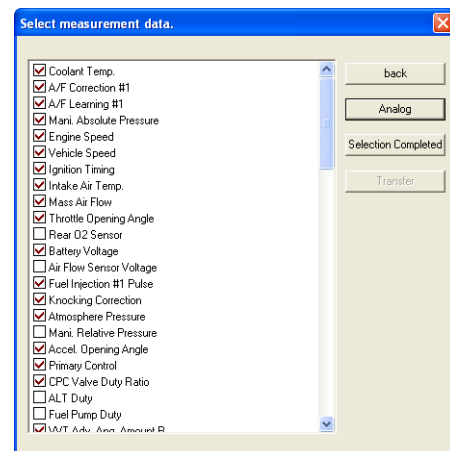
SMU-00609

13. On the Driving recorder menu, select {Mode Settings/Mode Transfer} and then press the Enter key or left-click with the mouse.



SMU-00477

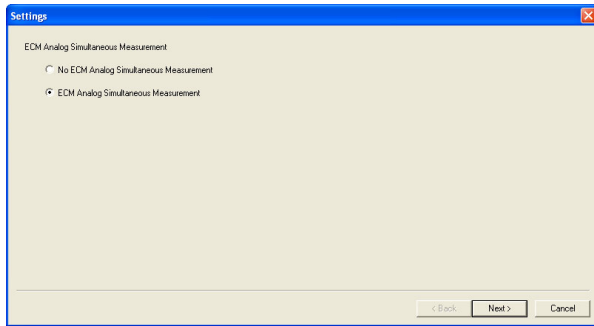
14. This displays a measurement item selection screen, click the [Analog] button.



SMU-00831

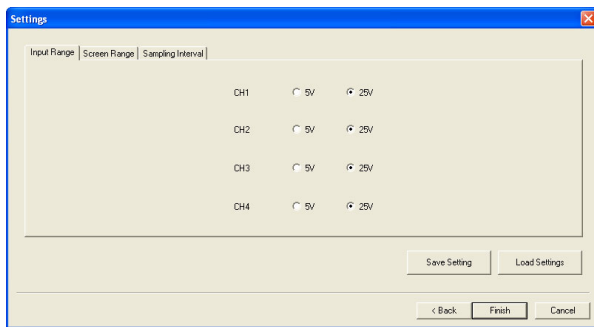


15. On the setup screen that appears, select “ECM Analog Simultaneous Measurement” and click the [Next] button.



SMU-00816

16. Select “Input Range” tab to configure the input range of analog data. Configure the desired range.

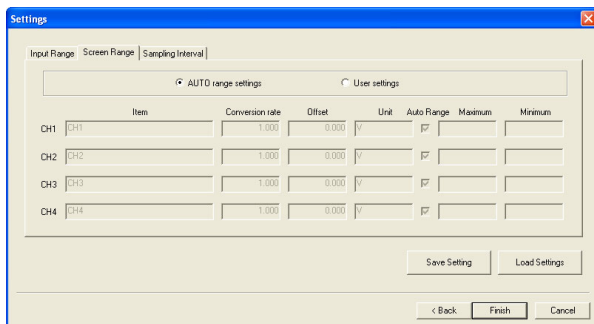


SMU-00832

**NOTE:**

For details about input range settings, see “Configuring Analog Sampling Settings” under “SDI Analog Sampling”.

17. Select “Screen Range” tab to configure the screen range of analog data. Configure the desired range.

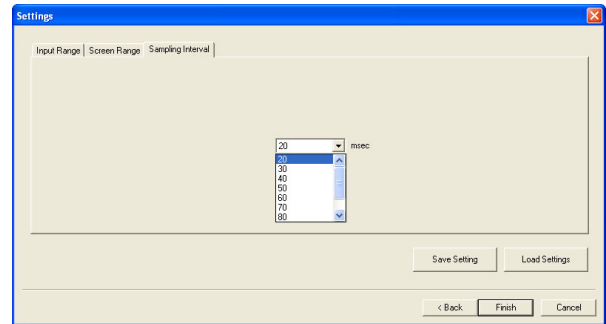


SMU-00833

**NOTE:**

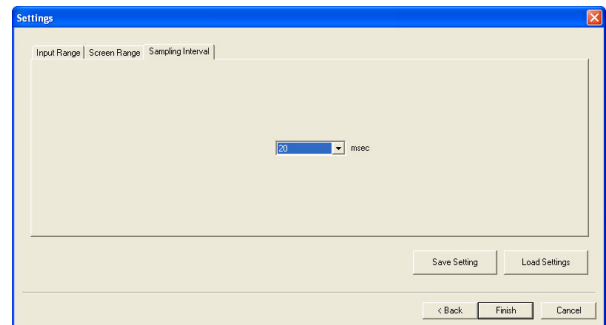
For details about screen range settings, see “Configuring Analog Sampling Settings” under “SDI Analog Sampling”.

18. Select “Sampling Interval” tab to configure the sampling interval of analog data. Select the desired interval from drop-down menu.



SMU-00834

19. After configuring the settings of all tabs, click the [Finish] button.



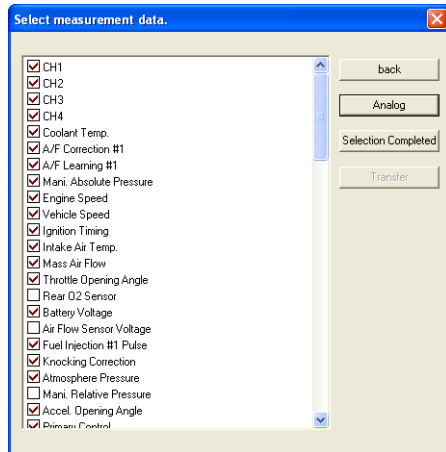
SMU-00835

**NOTE:**

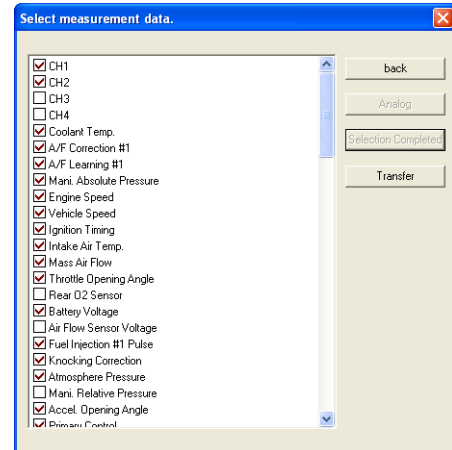
- You can save the settings of Input Range, Screen Range and Sampling Interval as a setup file, and load the saved setup file. This can be performed using the same procedures as those described in “Configuring Analog Sampling Settings” under “SDI Analog Sampling”. For this procedures, see the appropriate item.
- When loading a setup file, select the file which displays “ECM Analog Simultaneous Measurement” in System field in dialog box.



20. This displays a measurement item selection screen with analog sampling item. Boxes of recommended items for control module data sampling are checked as initial settings in the screen. If you wish to add or delete some items, manipulate the boxes of applicable items. Also, all analog sampling items are selected. Take the check marks off as required. After selecting the sampling items, click the [Selection Completed] button.

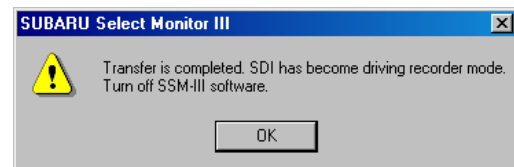


SMU-00836



SMU-00837

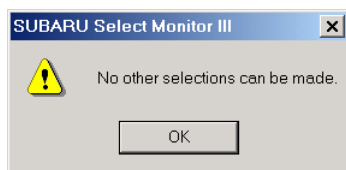
22. The message shown below will appear after the SDR setting file is created on the CF card in the SDI.



SMU-00480

#### NOTE:

If the message dialog box shown below appears while you are selecting data items, it means that the limit on the number of selectable control module data items has been reached. (Not involved with the number of selected items for analog data) Selection of further control module data items is not possible after this message appears. To select other items, deselect the check boxes next to the currently selected (checked) items of control module data, and then select the new items.



SMU-00154

21. After clicking the [Selection Completed] button, click the [Transfer] button.

#### NOTE:

If any message other than the one shown above appears, perform the operation as instructed by the message to create the setting file.

### Saving SDR Data to CF Card

SDR data can be saved to the CF card by pressing the [TRG] key while sampling is being performed or by pressing the trigger switch of the optional remote box.

#### NOTE:

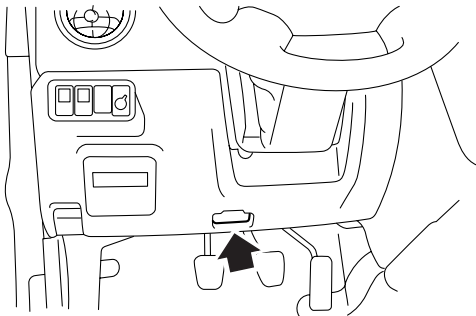
- Be sure to turn off SDI power before installing a CF card into or removing a CF card from its card slot. Inserting or removing a CF card while SDI power is turned on runs the risk of damaging CF card contents.
- Pressing the [TRG] key will save data starting from the point 10 minutes before the key is pressed, up to the point five seconds after the key is pressed.



1. Prepare the SDI, diagnosis cable, USB cable, a CF card with the SDR setting file is written, the pulse/analog box, and the pulse/analog probe.
2. Insert the CF card that contains the SDR setting file into the CF1 card slot of the SDI.
3. Connect the pulse/analog box to the SDI.
4. Connect the pulse/analog probe to the pulse/analog box.
5. Connect the pulse/analog probe to the location where you want to sample.
6. Use the diagnosis cable to connect the SDI to the data link connector of the vehicle.

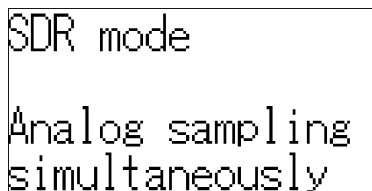
**NOTE:**

SDI power will turn on automatically when the diagnosis cable is connected to the vehicle. If the PWR LED of the SDI does not light, turn on the vehicle's ignition switch or start the engine, and then press the SDI [PWR] key and check again to see if the PWR LED of the SDI lights.



SMU-00113

7. After the SDI is turned on, sampling will start automatically and the screen shown below will appear on the SDI.



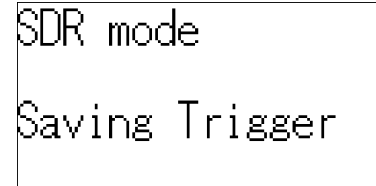
SMU-00838

**NOTE:**

In case that the SDI operates as a driving recorder, "SDR mode" is shown on the screen.

8. When sampling reaches the point you want to save, hold down the SDI [TRG] key or the trigger

switch of the remote box for at least one second. Pressing the [TRG] key or the trigger switch causes SDR data to be saved on the CF card. The message shown below appears on the SDI display when SDR data is saved on the CF card.



SMU-00549

9. Sample restarts automatically after the SDR data is saved to the CF card.

If you want to stop sampling, disconnect the diagnosis cable from the vehicle's data link connector, or hold down both the [MENU] key and the [DOWN] key of the SDI for at least two seconds in order to turn off the SDI.

**NOTE:**

To sample engine start data without Remote Box, turn the ignition switch to the ON position and keep it for a while (The engine is turned off at this moment). When the message "Analog sampling simultaneously" appears on the SDI display, start the engine to sample the data.

## Saving SDR Data to PC

The procedure to save the SDR data is the same as that described in "SDI Driving Recorder (SDR)". See "Saving SDR Data to PC" under "SDI Driving Recorder (SDR)" for the procedure.

## Opening and analyzing saved data

The procedure to open and analyze saved data is the same as that described in "SDI Driving Recorder (SDR)". See "Opening and analyzing saved data" under "SDI Driving Recorder (SDR)" for the procedure.



## DST-i Control Module Analog Simultaneous Measurement (SDR)

Also in driving recorder, analog data and control module data can be sampled simultaneously using the oscilloscope probe (option).

The following are the steps for sampling and analysing data.

- 1) Create a special SDR setting file.
- 2) Sample the SDR data.
- 3) Save the sampled SDR data.
- 4) Open and analyse the saved data.

Basic procedure of control module Analog Simultaneous Measurement in driving recorder is the same as that in driving recorder. Therefore, this section describes only "Creating an SDR setting file" and "Saving SDR Data to CF Card". For other procedures, see the "DST-i Driving Recorder (SDR)".

### NOTE:

- Handling Precautions of the oscilloscope probe. Refer to "DST-i Analog Sampling" section how to install the oscilloscope probe to DST-i.
- This function cannot be used if the oscilloscope probe is not installed.
- A SD card required in order to sample data using this function. Prepare a SD card before starting an operation.
- Be sure to turn off DST-i power before installing a SD card into or removing a SD card from its card slot. Inserting or removing a SD card while DST-i power is turned on runs the risk of damaging SD card contents.
- When using this function, always take measurements after you have created a setting file for the desired vehicle model. Measurement is not possible if the setting file stored in the SD card is for another vehicle model.
- You can carry out this function only when interface box to use is DST-i.
- The oscilloscope function software, you need to download from the homepage of DENSO. Oscilloscope function, screen display language of the PC and stand-alone is the only English. Download software and user's manual and specifications of the oscilloscope function, please refer to the following.  
Specifications of the oscilloscope function:  
[http://www.ds3.denso.co.jp/dst-i/dst-i\\_spec.html](http://www.ds3.denso.co.jp/dst-i/dst-i_spec.html)

User's manual of oscilloscope:

<http://www.ds3.denso.co.jp/dst-i/manuals.html>

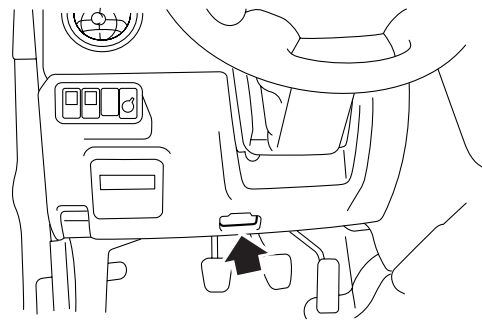
Download of oscilloscope software:

<http://www.ds3.denso.co.jp/dst-i/setup/ja/software.html>

## Creating an SDR Setting File

Use the following procedure to create a setting file which selected the items to be sampled on the SD card.

1. Prepare the DST-i, datalink cable, the USB cable, a PC with the PC application installed, and a SD card.
2. Insert the SD card into the card slot of the DST-i.
3. Use the datalink cable to connect the DST-i to the vehicle's data link connector.

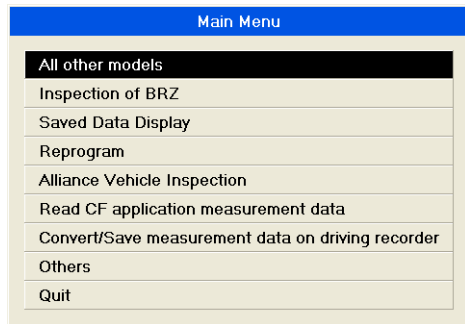


SMU-00113

4. Check to see if the power indicator of the DST-i lights.
5. Connect DST-i and a PC with the USB cable.
6. Turn on the vehicle's ignition switch.
7. Double-click the SSMIII icon on the PC screen to start up the application.

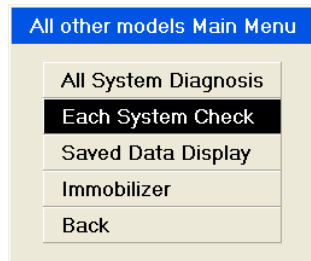


8. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



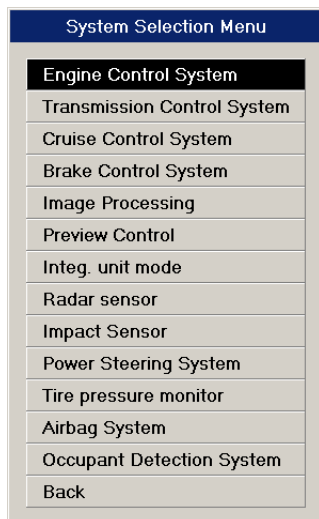
SMU-01294

9. Select [Each System Check] at the item selection screen.



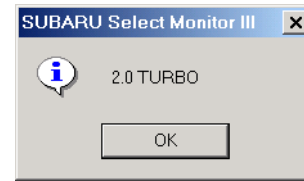
SMU-01296

10. Select [Engine Control System] at the System Selection Menu.



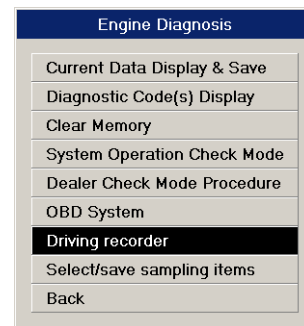
SMU-00665

11. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



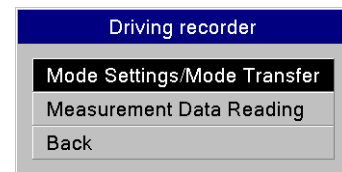
SMU-00128

12. From the list of fault diagnosis items, select [Driving recorder] and then press the Enter key or left-click with the mouse.



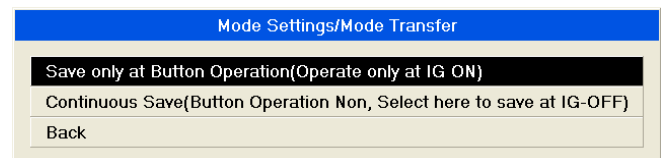
SMU-00609

13. On the Driving recorder menu, select [Mode Settings/Mode Transfer] and then press the Enter key or left-click with the mouse.



SMU-00477

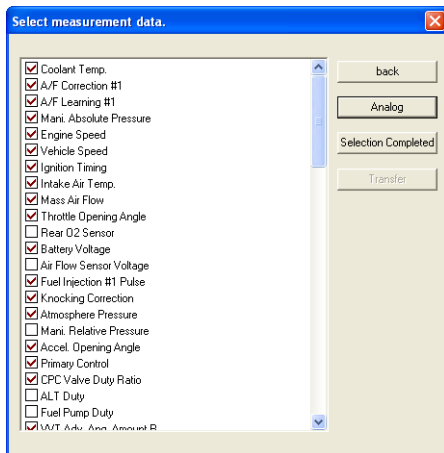
14. Select [Save only at Button Operation (Operate only at IG ON)] or [Continuous Save (Button Operation Non, Select here to save at IG-OFF)] at the item selection screen. (As an example, "Save only at Button Operation (Operate only at IG ON)" is selected.)



SMU-01515

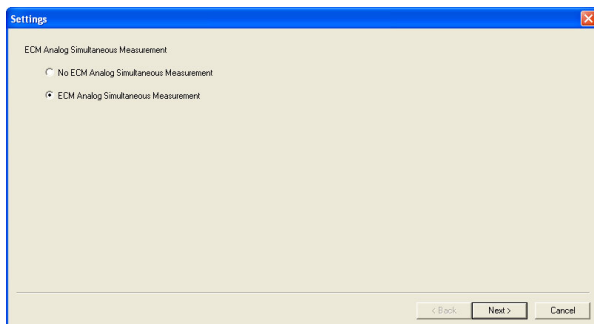


15. This displays a measurement item selection screen, click the [Analog] button.



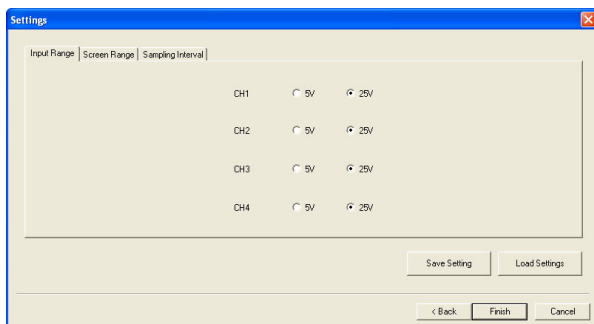
SMU-00831

16. On the setup screen that appears, select "ECM Analog Simultaneous Measurement" and click the [Next] button.



SMU-00816

17. Select "Input Range" tab to configure the input range of analog data. Configure the desired range.

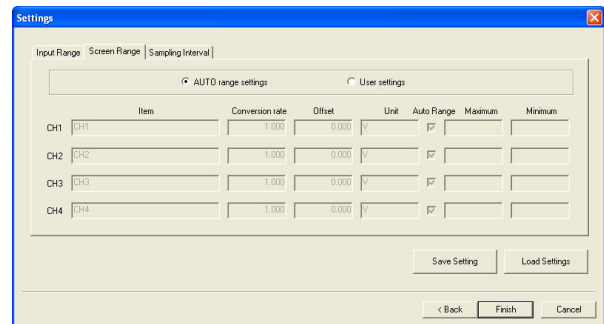


SMU-00832

#### NOTE:

For details about input range settings, see "Configuring Analog Sampling Settings" under "SDI Analog Sampling".

18. Select "Screen Range" tab to configure the screen range of analog data. Configure the desired range.



SMU-00833

#### NOTE:

For details about screen range settings, see "Configuring Analog Sampling Settings" under "SDI Analog Sampling".

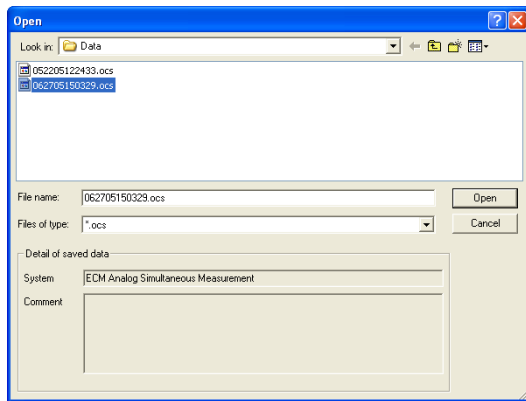
19. After configuring the settings of tabs, click the [Finish] button.

#### NOTE:

- Sampling Interval, This setting is not required for the fixed 31.25 ms.
- You can save the settings of Input Range, Screen Range and Sampling Interval as a setup file, and load the saved setup file. This can be performed using the same procedures as those described in "Configuring Analog Sampling Settings" under "SDI Analog Sampling". For this procedures, see the appropriate item.



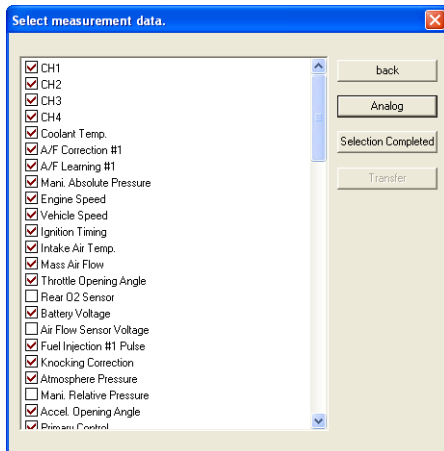
- When loading a setup file, select the file which displays "ECM Analog Simultaneous Measurement" in System field in dialog box.



SMU-00819

20. This displays a measurement item selection screen with analog sampling item.

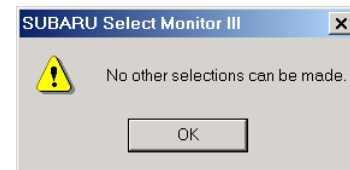
Boxes of recommended items for control module data sampling are checked as initial settings in the screen. If you wish to add or delete some items, manipulate the boxes of applicable items. Also, all analog sampling items are selected. Take the check marks off as required. After selecting the sampling items, click the [Selection Completed] button.



SMU-00836

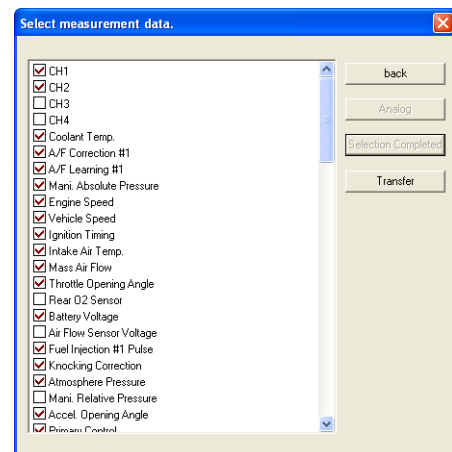
#### NOTE:

If the message dialog box shown below appears while you are selecting data items, it means that the limit on the number of selectable control module data items has been reached. (Not involved with the number of selected items for analog data) Selection of further control module data items is not possible after this message appears. To select other items, deselect the check boxes next to the currently selected (checked) items of control module data, and then select the new items.



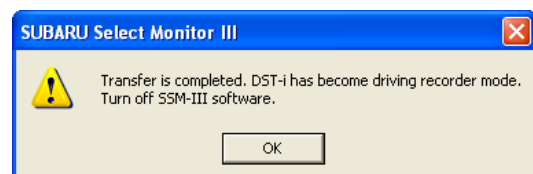
SMU-00154

21. After clicking the [Selection Completed] button, click the [Transfer] button.



SMU-00837

22. The message shown below will appear after the SDR setting file is created on the SD card in the DST-i.



SMU-01543



**NOTE:**

If any message other than the one shown above appears, perform the operation as instructed by the message to create the setting file.

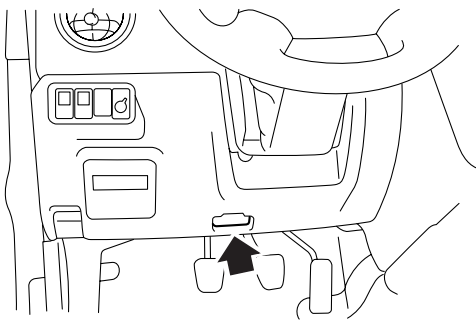
## Saving SDR Data to SD Card

SDR data can be saved to the SD card by selecting [Save] in the DST-i screen and pressing the [A] key while sampling is being performed.

**NOTE:**

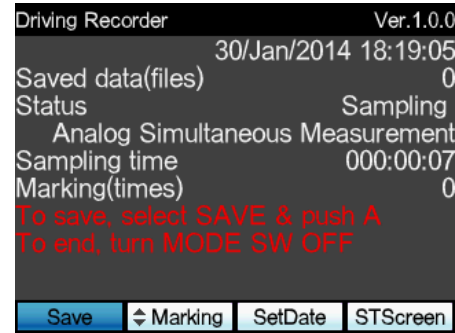
- Be sure to turn off DST-i power before installing a SD card into or removing a SD card from its card slot. Inserting or removing a SD card while DST-i power is turned on runs the risk of damaging SD card contents.
- Pressing the [A] key will save data starting from the point 10 minutes before the key is pressed, up to the point five seconds after the key is pressed.

1. Prepare the DST-i, datalink cable, USB cable, a SD card with the SDR setting file is written, and the oscilloscope probe.
2. Insert the SD card that contains the SDR setting file into the card slot of the DST-i.
3. Connect the oscilloscope probe to the DST-i.
4. Connect the oscilloscope probe to the location where you want to sample.
5. Use the datalink cable to connect the DST-i to the data link connector of the vehicle.



SMU-00113

6. Turn the mode switch of DST-i ON.
7. After the DST-i is turned on, sampling will start automatically and the screen shown below will appear on the DST-i.



SMU-01513

**NOTE:**

- If there is no SDR Setting File on the SD card, the DST-i enters the Stand-alone Mode.
- In case that the DST-i operates as a driving recorder, "Driving Recorder" is shown on the screen.
- The followings are the explanation of displayed items in the screen.

Saved data (files): Displays the data saved in the SD card.

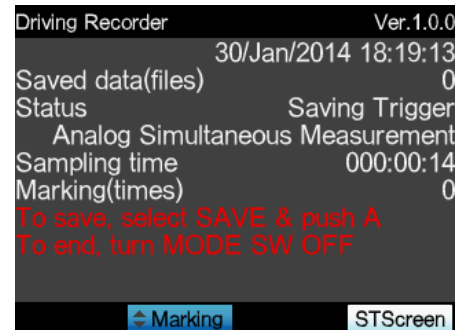
Status: Displays the current measurement status.

Sampling time: Displays the duration of measurement from the start of measurement.

Marking (times): Displays the number of times of marking.

- By on the screen "Sampling time" is counted, You understand that a measurement is carried out normally.

8. When sampling reaches the point you want to save, press the DST-i [A] key. Pressing the DST-i [A] key causes SDR data to be saved on the SD card. The screen shown below appears on the DST-i when SDR data is saved on the SD card.



SMU-01514



9. Sample restarts automatically after the SDR data is saved to the SD card.

If you want to stop sampling, disconnect the data-link cable from the vehicle's data link connector, or select [ST Screen] in the DST-i screen and press the [A] key.

## **Saving SDR Data to PC**

The procedure to save the SDR data is the same as that described in "DST-i Driving Recorder (SDR)". See "Saving SDR Data to PC" under "DST-i Driving Recorder (SDR)" for the procedure.

## **Opening and analyzing saved data**

The procedure to open and analyze saved data is the same as that described in "DST-i Driving Recorder (SDR)". See "Opening and analyzing saved data" under "DST-i Driving Recorder (SDR)" for the procedure.



## Remote Box

Using the optional remote box allows you turn the SDI on, detect trigger signals and sample output signals from the internal G sensor.

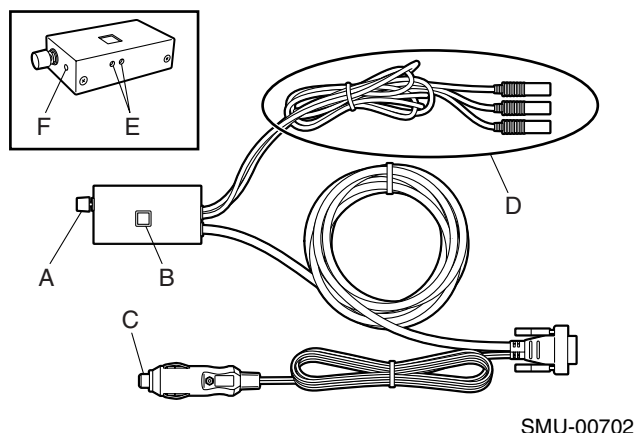
### NOTE:

- The remote box is optional, and is not included in standard with the SSIII Kit.
- You can carry out this function only when interface box to use is SDI.

## Handling Precautions

- When power is being supplied to the SDI by the diagnosis cable or the AC adaptor, power is supplied to the remote box even if the SDI is off (PWR LED not lit). For this reason, when connecting or disconnecting the remote box, be sure to completely disengage the power to SDI. Connecting or disconnecting the remote box with the power still supplied to SDI can damage the SDI.
- Never try to disassemble the remote box.
- This device is not water resistant. Never allow it to be splashed with water, oil, grease, etc.

## Names of Parts



- A: Trigger switch  
 B: POWER ON button  
 C: Cigar plug  
 D: Probe  
 E: Bias adjustment hole  
 F: LED light

## Connecting to the SDI

1. Disconnect the diagnosis cable and AC adaptor from the SDI.

### IMPORTANT:

Completely disengage the power to the SDI.

2. Connect the remote box to the remote box connector of the SDI.

## Remote Box Functions

### Startup the SDI

The SDI can be turned on without pressing the PWR key of the SDI by performing the following operation.

#### 1) Switch operation

Pressing the POWER ON button (blue) on the remote box turns the SDI on.

#### 2) Ignition signal detection

If you connect the cigar plug of the remote box to the vehicle, and set the ignition switch to accessory (ACC), the ignition signal is detected to automatically turn the SDI on.

#### 3) Acceleration detection

If you place the remote box in the door pocket or other receptacle, and then open or close the door, the output voltage of the X- or Y-axis of the G sensor built into the remote box is detected to automatically turn the SDI on.

### NOTE:

This function is important when the driving recorder function is used to sample data at the engine is started.

## Trigger Signal Output

A trigger can be applied in the same way as pressing the [TRG] key on the SDI by pressing the trigger switch on the remote box in the Driving Recorder Mode.

## G Sensor Analog Output

The output voltage of the X- and Y-axis of the G sensor built into the remote box can each be sampled independently.

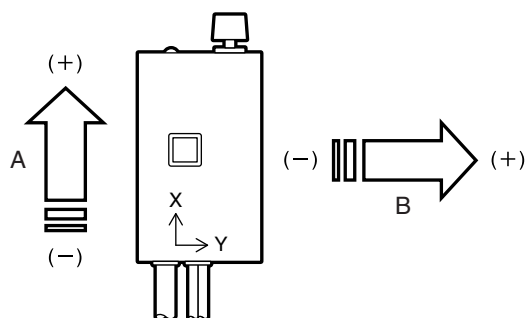


## Sampling of G Sensor Analog Output

1. Prepare the SDI, remote box, Pulse/Analog Kit, and a PC with the PC application installed.
2. Firmly fix the remote box at a horizontal or vertical position on the vehicle.

### NOTE:

- For the direction of detection of G sensor acceleration, the arrow direction on the X- and Y-axis indicated on the remote box is output as the + (plus) side.

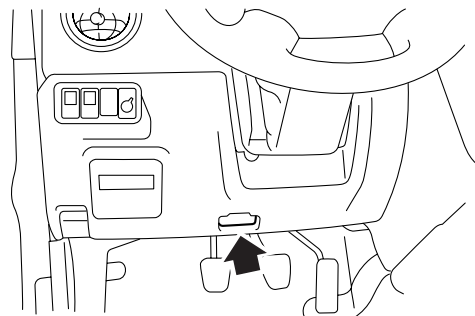


SMU-00703

- A: When acceleration is given to direction of the arrow, analog output of X axial direction (the red probe) voltage rises.
- B: When acceleration is given to direction of the arrow, analog output of Y axial direction (the blue probe) voltage rises.
- You can carry out this function only when interface box to use is SDI.
3. Connect the remote box to the SDI.
  4. Use the diagnosis cable to connect the SDI to the data link connector of the vehicle.

### NOTE:

SDI power will turn on automatically when the diagnosis cable is connected to the vehicle. If the PWR LED of the SDI does not light, turn on the vehicle's ignition switch or start the engine, and then press the SDI [PWR] key and check again to see if the PWR LED of the SDI lights.



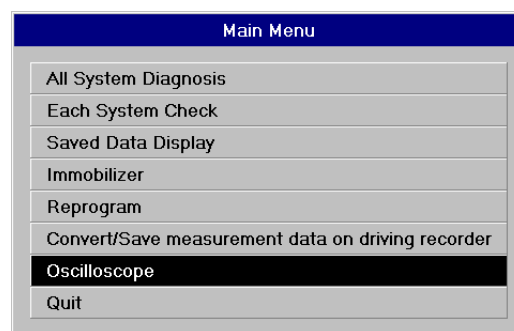
SMU-00113

5. Use the USB cable to connect the SDI to the PC.
6. Connect the pulse/analog box to the SDI.
7. Connect the red and blue probes of the remote box to the analog port of the pulse/analog box, and the black probe to the COM port.

### NOTE:

The red probe outputs the X-axis signal and the blue probe the Y-axis signal. The probe is the GND.

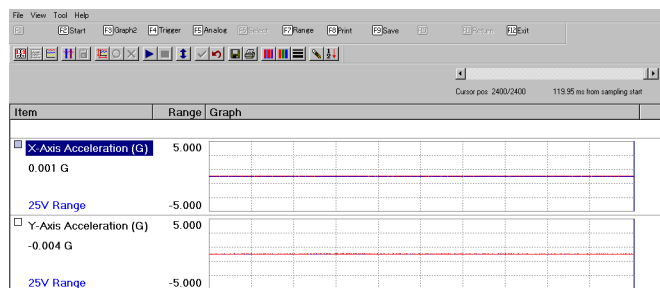
8. Turn on the vehicle's ignition switch.
9. Double-click the SSMIII icon on the PC screen to start up the application.
10. On the Main Menu that appears on the display, select [Oscilloscope] and then press the [Enter] key or left-click with the mouse.



SMU-00618



11. As the Analog Sampling screen is displayed, set the input range to [5 V]. For details about input range settings, see "Configuring Analog Sampling Settings" under "SDI Analog Sampling"



SMU-00704

#### NOTE:

The output characteristics of this G sensor is 1.3V/ G. And, output voltage is 2.5V at 0G. Therefore, to display G sensor output as physical values (Unit: G), enter the numerical values below in Conversion rate and Offset of analog sampling.

- Conversion rate = 0.769
- Offset = -1.923

Conversion rate	Offset	Unit	Aut
0.769	-1.923	G	
0.769	-1.923	G	

SMU-00823

If it is shifting from zero (0G) when remote box is horizontal after setting to physical display as above, insert a Phillips head screwdriver into the bias adjustment hole, and turn the adjustment screw to adjust the waveform level. During this adjustment, turning the screwdriver clockwise moves the waveform to the “-” (minus) direction.



## Guideline for reprogramming procedure for SSMIII

The SSMIII has a pass-thru (J2534-1) reprogram function. This section explains the procedure for reprogramming with the SSMIII.

### Notes on doing control module reprogramming

#### Before starting

- 1) When you use wireless LAN or Bluetooth, you cannot run the re-program. When you run the re-program, please perform it by USB connection.
- 2) Do reprogramming more than 50 m (164 ft) away from high voltage wires.
- 3) Do reprogramming more than 10 m (33 ft) away from equipment that might emit high voltage.
- 4) Do reprogramming more than 2 m (7 ft) away from equipment that emits electronic noise (such as a vehicle having its ignition checked).
- 5) Do reprogramming more than 2 m (7 ft) away from electronic devices that emit radio waves (such as cellular phones or pagers).
- 6) Before starting the reprogramming, turn off all the electric equipment (such as the ignition system, audio system, cigarette lighter, or power seats).
- 7) Reprogramming automatically turns off if the ambient temperature falls below 0°C (32°F).
- 8) Before reprogramming, be sure to set the PC power management to "Always ON". Failure to set to "always ON" may cause communication error due to PC power down on the way of reprogramming resulting in reprogramming failure.
- 9) Before reprogramming, confirm DTC on all control module including the control module for reprogramming. If you find DTC, please restore the parts, which have problems. Always execute [Clearing Memory] after restoring the locating fault.

#### During reprogramming

- 1) Do not touch any switches in the vehicle.
- 2) Do not touch the pedals, and do not open or close the doors.
- 3) Stay near the car
- 4) Do not touch the cables or connectors, and do not move the interface box.
- 5) Even if some of the warning lights in the combination meter turn on during reprogramming or displays "ErrHC", "ErrEG" or etc. in multi-information part, these are not errors.

#### After reprogramming

When reprogramming completes, DTC related to the CAN communication might remain in the unit for the CAN communication. In that case, always execute [Clearing Memory].

### Control module reprogramming (Except for VDC of BRZ)

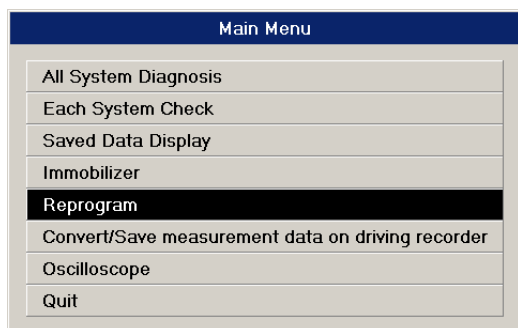
1. Prepare the interface box, USB cable, PC with the SSMIII application installed, diagnosis cable or datalink cable.
2. Attach the delivery mode fuse (test mode connector)(green).

#### NOTE:

- The jumper harness may need to be attached separately depending on the type of vehicle.
  - Do not use the fuse which equipped on vehicle.
  - Make sure the vehicle's ignition switch is off before connecting or disconnecting the delivery mode fuse (test mode connector).
3. Use the diagnosis cable or datalink cable to connect the interface box to the datalink connector of the vehicle.
  4. Connect the interface box to the PC with the USB cable.
  5. Turn on the vehicle's ignition switch.
  6. Double-click the SSMIII icon on the PC screen to start up the SSMIII application. This causes the Main Menu to appear.

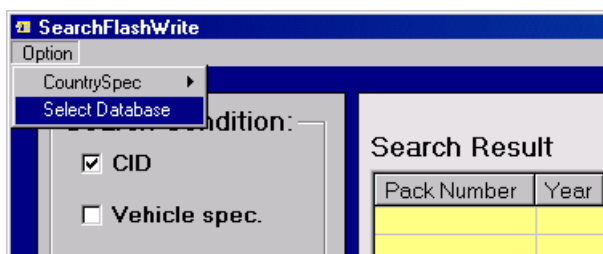


7. Select [Reprogram] from the Main Menu to execute it.



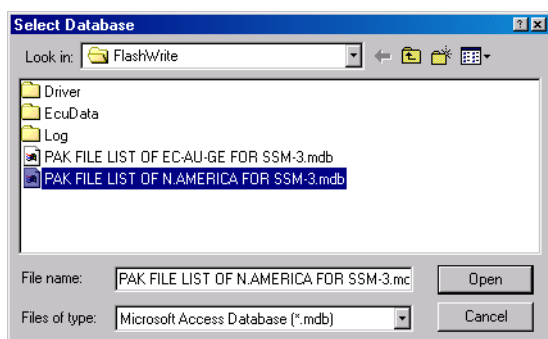
SMU-00611

8. This displays Serch FlashWrite screen. Select "Select Database" from "Option" in menu.



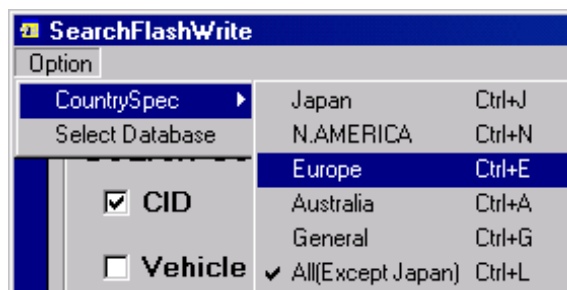
SMU-00801

9. This displays the Select Database window. Select the desired database file (.mdb file) and click the [Open] button.



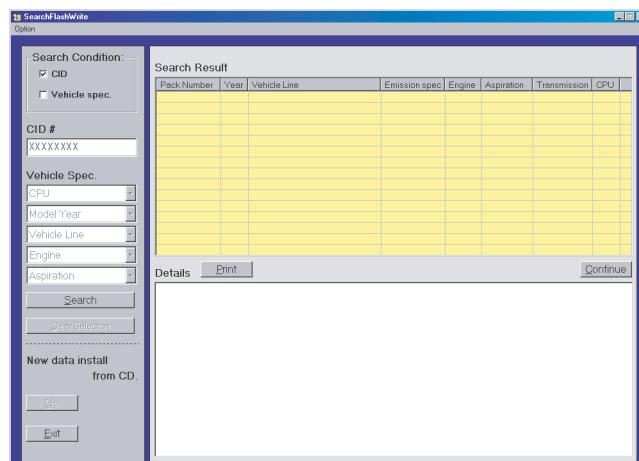
SMU-00802

10. Select "CountrySpec" in menu to select desired destination. This causes search conditions of PAK file to be refined for selected destination.



SMU-00803

11. In the Search FlashWrite screen, check the CID check box, input the CID of the control module that you are going to reprogram, and then click the [Search] button to find the PAK file. If you don't know the CID of the control module, use the vehicle specifications to find the PAK file.



SMU-00686

#### NOTE:

- If no search results are displayed when Vehicle spec. is selected as a Search Condition, you can clear the search items by pressing the [Clear Selection] button to return the selected search items to their initial status.

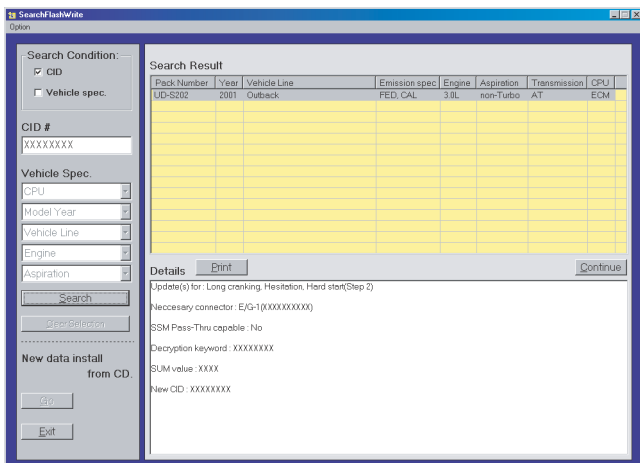


- The password request dialog box appears when you execute reprogram on a computer on which the first diagnostic software has been installed.



SMU-00407

- Check the results of the search, then double click the PAK file listed in the Pack Number column, or after clicking to make a selection click the [Continue] button.

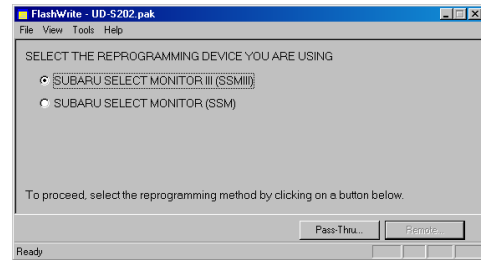


SMU-00687

**NOTE:**

You can print out information of the selected items in Search Result column and each of their detailed information by clicking the [Print] button.

- Select the reprogramming device you are using (in this case, select SUBARU SELECT MONITOR III), and then click the [Pass-thru] button to start reprogramming.



SMU-00541

**NOTE:**

Use the DST-i, if you select the PAK file that is not able to support the DST-i, it is not possible to click the [Pass-Thru] button. And, it is not possible to re-program execution.

In this case, please change the interface box to SDI. Please refer to "Selection of the interface box used" for the setting method of the interface box.

Please set an interface box in SDI.

- Perform reprogramming in accordance with the instructions that appear on the screen. For more information on reprogramming, see the FlashWrite HELP file.

### Action to be taken when communication error occurs during reprogramming

The following dialog box will appear when communication error occurs for some reasons such as PC or interface box power OFF, or disconnection of diagnosis cable or USB cable during reprogramming. In this case, refer to the notes below and reprogram again according to the instruction appeared on the screen.

Basically, communication error during reprogramming will not damage the control module. However, be careful that the erroneous action may cause damage to the control module when you take the countermeasure.



SMU-00773



**NOTE:**

When the reprogram is performed using SSMIII, the information associated with reprogramming of the control module will be stored in the hard disc of the PC. This information is used in the future reprogramming. Also, this information is overwritten every time the control module is reprogrammed. Therefore, reprogramming becomes impossible when an error occurs but reprogramming is done for another control module before attempting to re-reprogram the affected parts, since the information stored in the hard disc has been overwritten. To prevent this, whenever the communication error occurs, be sure to re-reprogram the affected control module before the information associated with the reprogramming in the hard disc is overwritten. The information stored in the hard disc will not be erased even if the PC power is OFF.

### Reprogramming of main microcomputer and sub-microcomputer

When the control module has a main microcomputer and a sub-microcomputer, NSM executes reprogramming twice. However, as SSMIII permits consecutive rewriting of main microcomputer and sub-microcomputer, both microcomputers can be rewritten through one reprogramming.

### Control module reprogramming (VDC of BRZ)

In this item, it has been described for the steps of the VDC reprogramming (BRZ) using the CUW (Calibration Update Wizard).

**NOTE:**

Reprogramming using the CUW is only possible to VDC of BRZ.

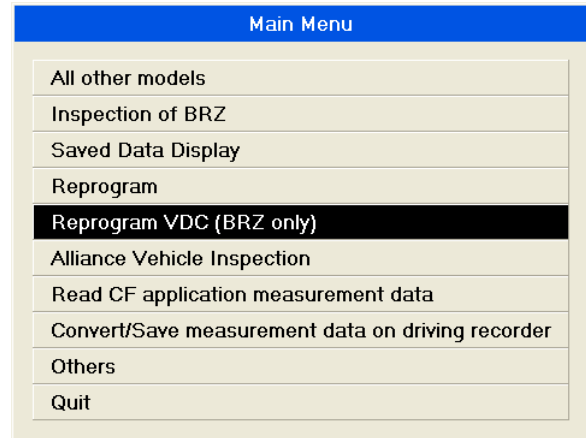
### Getting Ready

1. Prepare the interface box, USB cable, PC with the SSMIII application installed, diagnosis cable or datalink cable.
2. Use the diagnosis cable or datalink cable to connect the interface box to the datalink connector of the vehicle.
3. Connect the interface box to the PC with the USB cable.
4. Turn on the vehicle's ignition switch.

5. Double-click the SSMIII icon on the PC screen to start up the SSMIII application. This causes the Main Menu to appear.

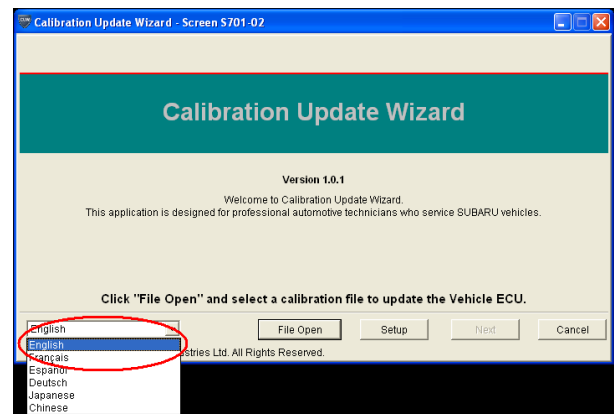
### When start CUW from SSMIII application

1. Select [Reprogram VDC (BRZ only)] at the displayed main menu.



SMU-01360

2. Set an indication language. (As an example, "English" is selected.)



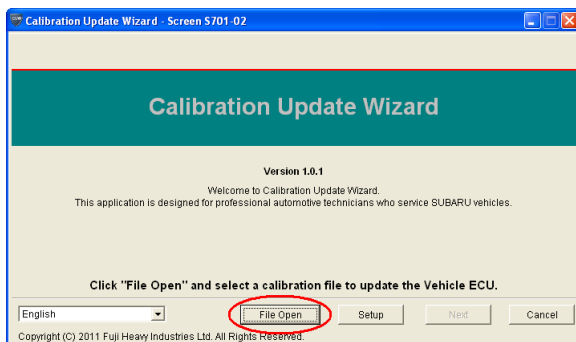
SMU-01361

**NOTE:**

By initial setting, always set in English.

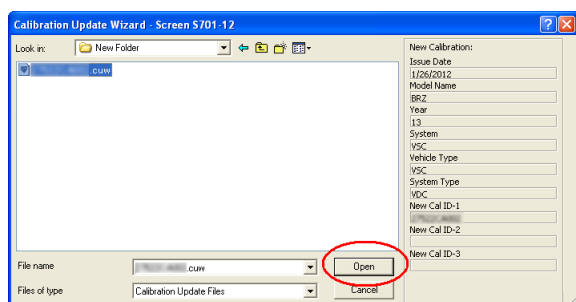


3. After having confirmed setting contents, click the [File Open] button.



SMU-01362

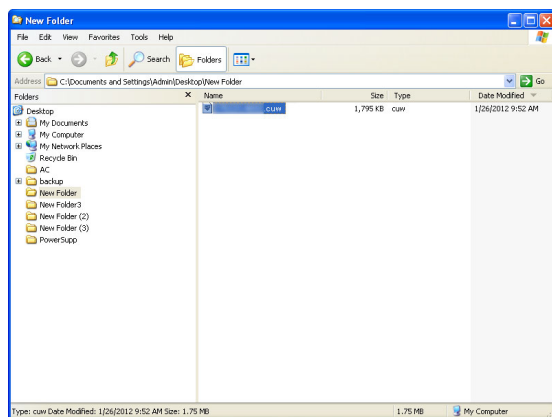
4. Choose cuw file, click a [Open] button.



SMU-01363

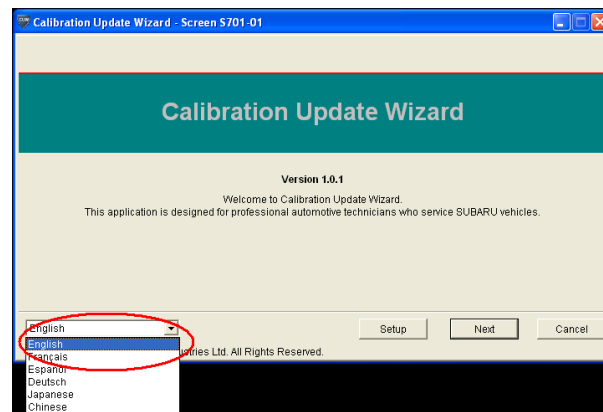
## When start CUW from cuw file

1. Choose cuw file and double-click.



SMU-01364

2. Set an indication language. (As an example, "English" is selected.)

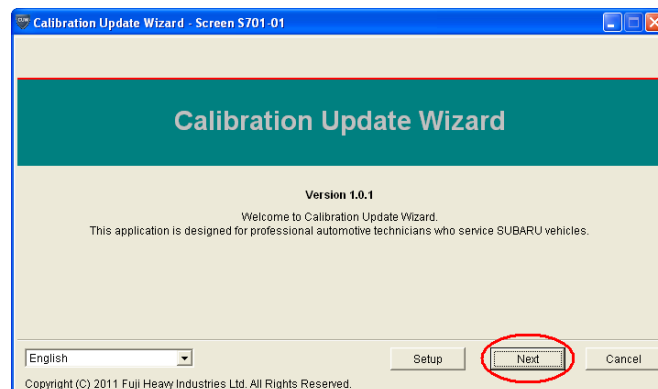


SMU-01365

## NOTE:

By initial setting, always set in English.

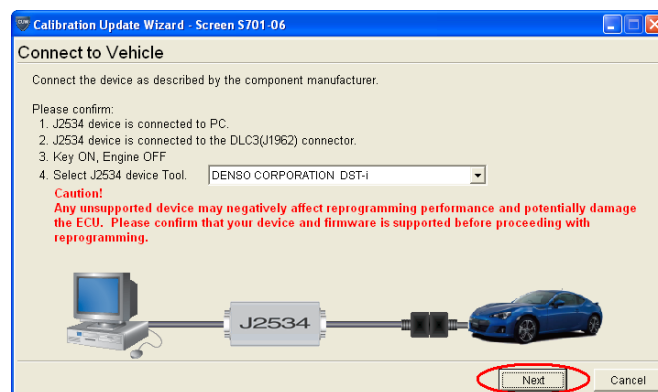
3. Click the [Next] button.



SMU-01366

## Perform the Reprogram

1. Click the [Next] button.



SMU-01367

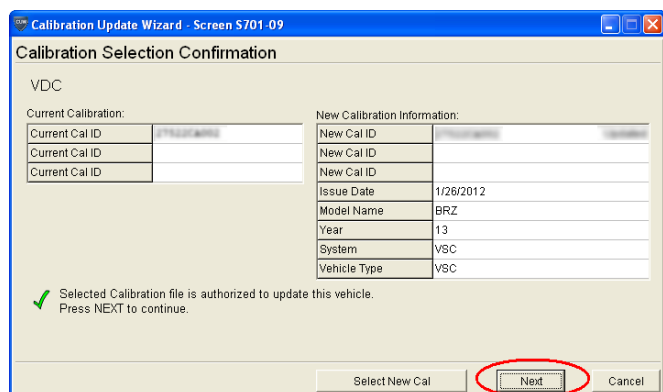


2. Stand by as the message below will appear on the screen.



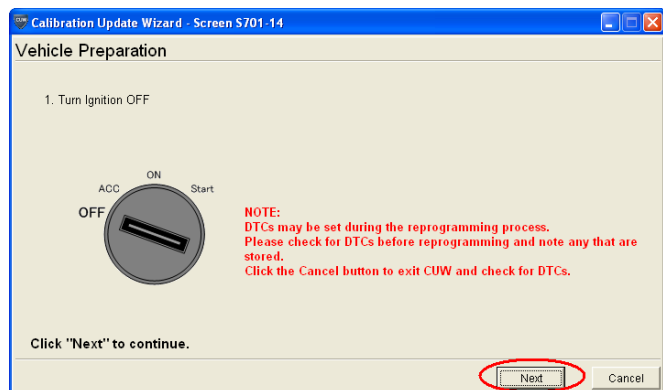
SMU-01368

3. Click the [Next] button.



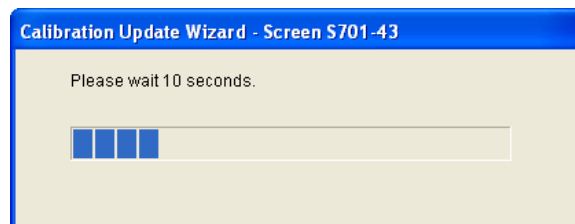
SMU-01369

4. Confirm message content and click [Next] button.



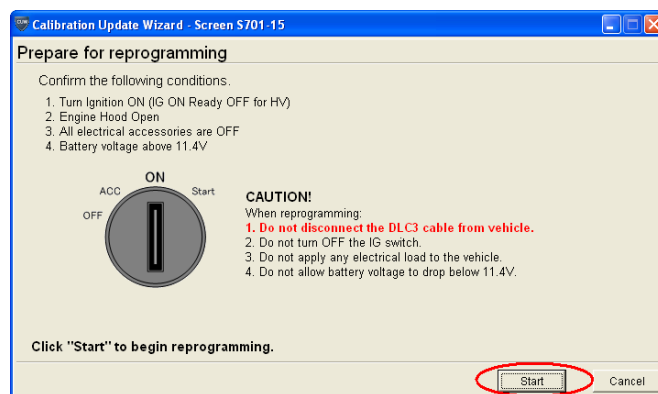
SMU-01370

5. Stand by as the message below will appear on the screen.



SMU-01371

6. Confirm message content and click [Start] button.



SMU-01372

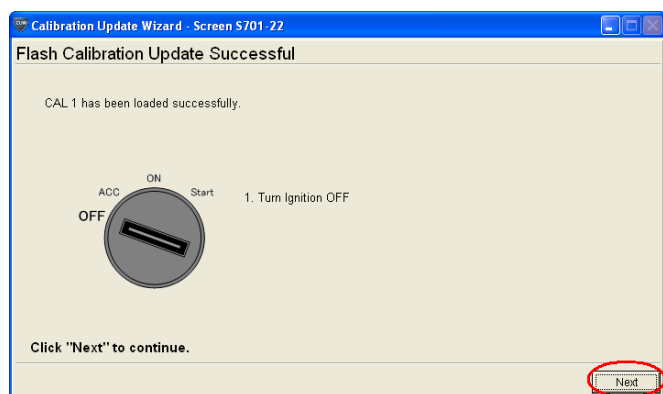
7. Stand by as the message below will appear on the screen.



SMU-01373

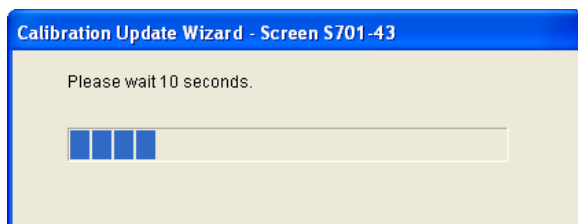


8. Confirm message content and click [Start] button.



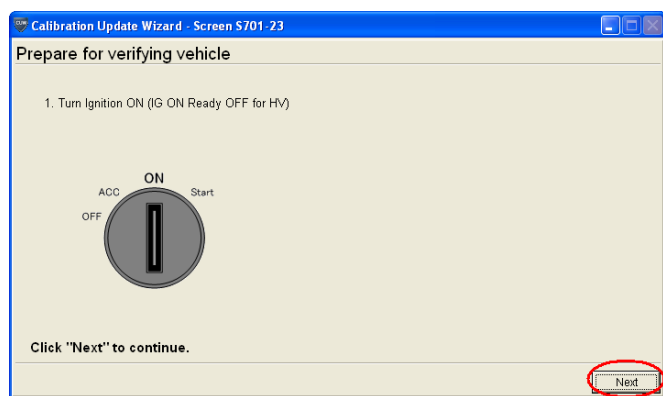
SMU-01374

9. Stand by as the message below will appear on the screen.



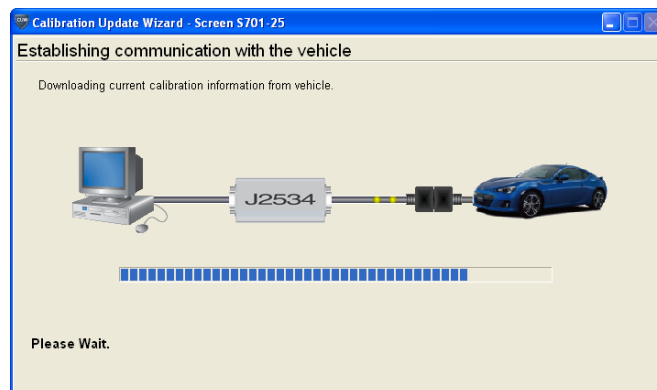
SMU-01375

10. Confirm message content and click [Start] button.



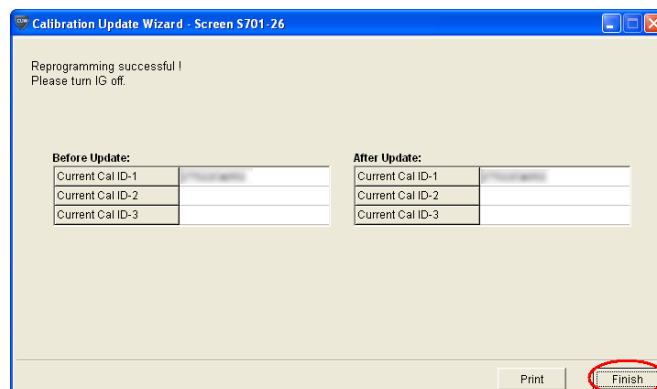
SMU-01376

11. Stand by as the message below will appear on the screen.



SMU-01377

12. The screen shown below will appear if reprogram ends normally. Confirm message content and click [Finish] button.



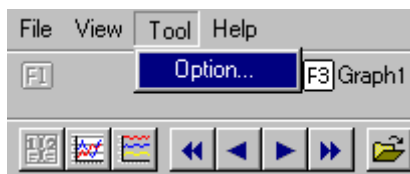
SMU-01378



## Option setting

### Changing the Screen Font

The font face, size, and style of the screen font can be changed as desired. Click the [Tool] menu, and then click [Option] to display the font selection tab.



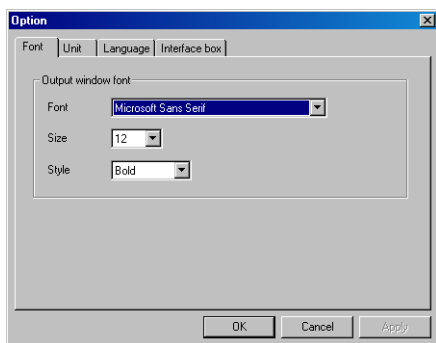
SMU-00597

Click the [Font] box arrow button and then select a font from the list of options that appears.

Click the [Size] box arrow button and then select a size from the list of options that appears.

Click the [Style] box arrow button and then select the style (standard or bold) from the list of options that appears.

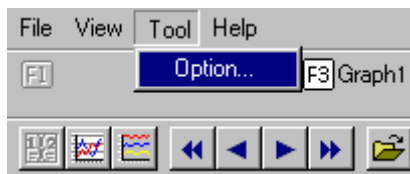
After configuring all of the settings, click the [OK] button.



SMU-00684

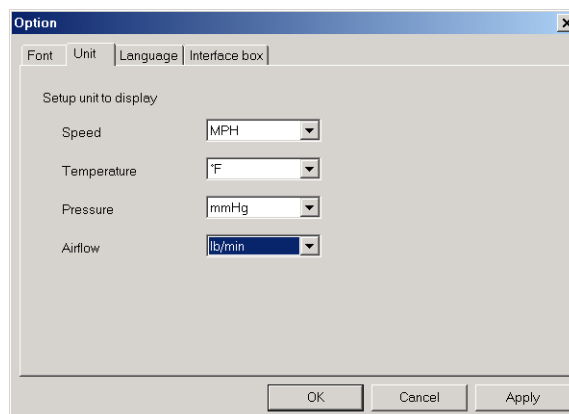
### Changing the Display Units

SSMIII normally uses SI units to display values, but non-SI units can be specified for speed, temperature, pressure, and airflow. Click the [Tool] menu and then click [Option].



SMU-00597

On the unit selection tab, select the desired units and then click the [OK] button.



SMU-00102

Clicking the **F10 Non SI** button on the Digital Data Screen or Graph Screen Function Key Bar, or pressing the F10 function key on the PC keyboard will display the sampled data using the display units selected above.

Item	Value	Unit	Maximum	Minimum
<input checked="" type="checkbox"/> Coolant Temp.	96	°C	96	96
<input checked="" type="checkbox"/> A/F Correction #1	-0.8	%	0.0	-0.8
<input checked="" type="checkbox"/> A/F Learning #1	-7.0	%	-7.0	-7.0
<input checked="" type="checkbox"/> Mani. Absolute Pressure	37	kPa	38	37
<input checked="" type="checkbox"/> Engine Speed	717	rpm	731	717
<input checked="" type="checkbox"/> Vehicle Speed	0	km/h	0	0
<input checked="" type="checkbox"/> Ignition Timing	12.5	deg	13.0	11.5
<input checked="" type="checkbox"/> Intake Air Temp.	62	°C	62	62

SMU-00598

To return to the SI unit screen, click **F10 SI** or press the F10 function key on the PC keyboard.

### Changing the Display Language

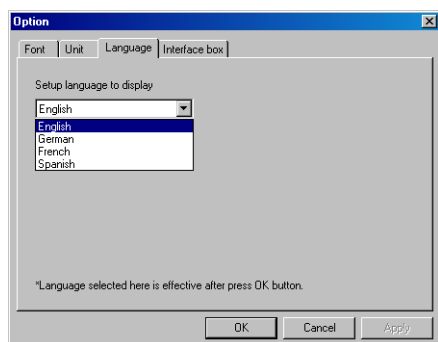
Click the [Tool] menu, and then click [Option] to display the language selection tab.

Select the desired language from the selection box that appears.



**NOTE:**

When you install the application, the language of the PC operating system is selected automatically.



SMU-00685

## Communication log data

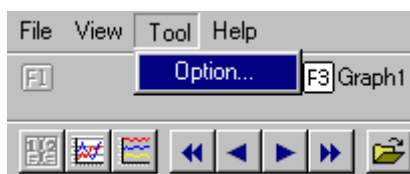
You can record and get the SSMIII communication log data as necessary.

**NOTE:**

Communication log is used to record a record of the SSMIII application communication. This includes the date and time of transmission, reception of data, and all operations.

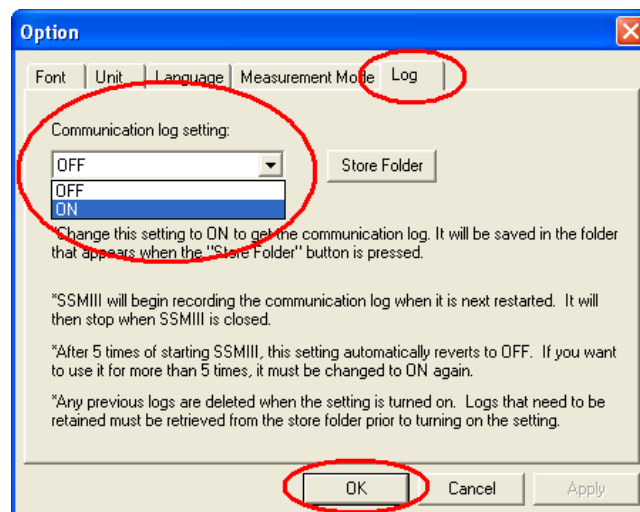
## Recording procedure of communication log data

1. Click the [Tool] menu and then click [Option].



SMU-00597

2. Display the Log Settings tab. Set the "Setup the communication log", please click the [OK] button.



SMU-01492

**NOTE:**

- When you change the communication log acquisition state from OFF to ON, the communication log data which acquired in the past are clear all. When you want to keep the communication log data acquired in the past, please move the data from the storage folder.
- When you started five times of application software SSMIII, setting of communication logging state return to the OFF automatically.

3. Restart SSMIII.

4. Depending on the communication log data you want to record, operate those features of the SSMIII.

5. Exit SSMIII Application.

**NOTE:**

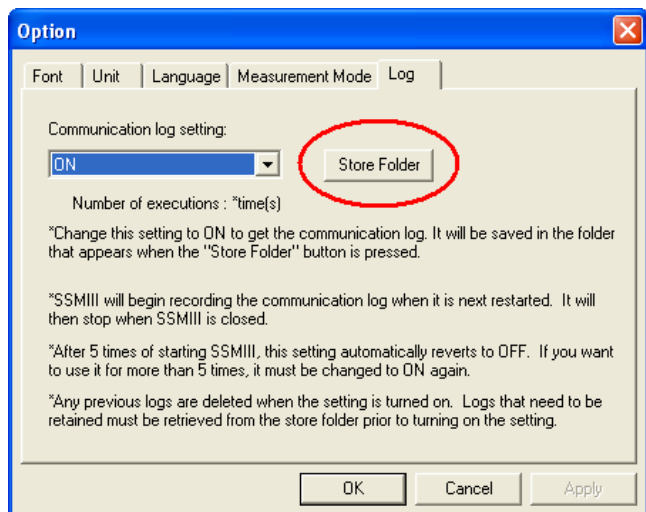
Following completion of the above procedures, the communication log data will be recorded in the storage folder.



## Confirm the store folder of communication log data

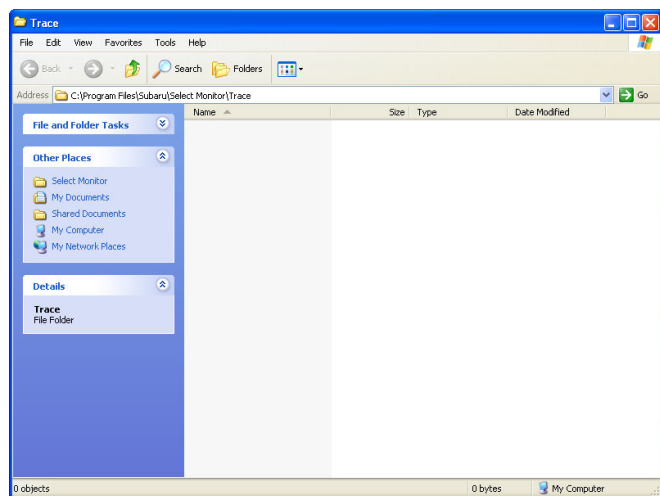
You can confirm the store folder of communication log data.

Display the Log Settings tab, and click the [Store Folder] button.



SMU-01493

The store folder of communication log data is displayed.



SMU-01494

## Setup the switching output value

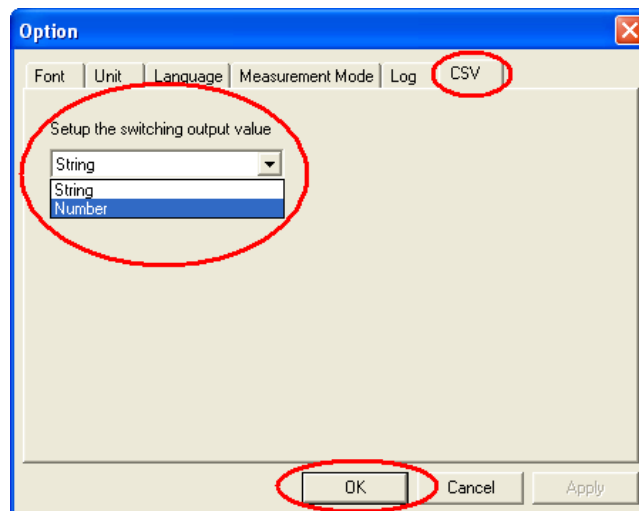
You can convert a form of the indication character string into CSV form.

Click the [Tool] menu and then click [Option].



SMU-00597

Display CSV setting tab. "Setup the switching output value" form indication in [Number]. Please click a [OK] button.



SMU-01484



## SDI Analog Sampling

Analog data sampling can be performed using the optional pulse/analog cartridge, the pulse/analog box, and pulse/analog probe.

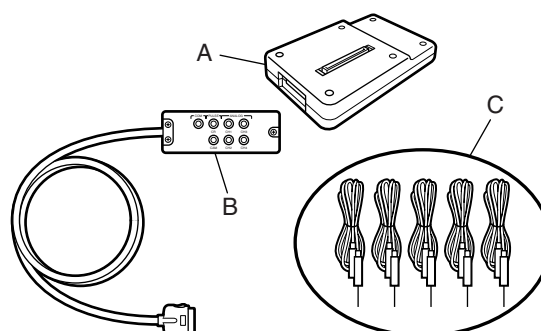
### NOTE:

- The pulse/analog cartridge, pulse/analog box, and pulse/analog probe are options. They are not included in the standard SSMIII Kit.
- In case of analog sampling, maximum 5,000 data can be saved.
- Since this device is a differential input device, minus (-) sampling is also supported. This device can be inputted from four channels using four pulse/analog probes. On the other hand, a minus input is shared and is one.
- You can carry out this function only when interface box to use is SDI.

## Handling Precautions

- Never try to disassemble the SDI, the pulse/analog cartridge, the pulse/analog box, or the pulse/analog probe.
- Be sure to turn off SDI power (PWR LED not lit) before installing or removing the pulse/analog cartridge. Installing or removing the cartridge while power is on can damage the SDI and the pulse/analog cartridge.
- Be sure to attach the back cover of the SDI correctly. Incorrectly attaching the cover can cause SDI power to disengage.
- Never touch the connectors of the SDI or the pulse/analog cartridge without first discharging your body of static electricity. Doing so can damage the SDI and pulse/analog cartridge.
- This device is not water resistant. Never allow it to be splashed with water, oil, grease, etc.
- The rated input voltage range of the COM port is  $\pm 30V$ . Never input a signal that exceeds the rated voltage. Doing so can damage the device.

## Pulse/Analog Kit Contents



SMU-00612

A: Pulse/analog cartridge

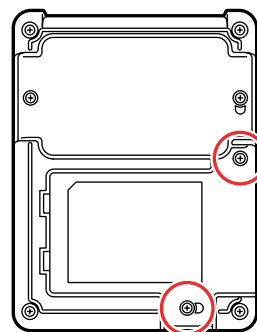
B: Pulse/analog box

C: Pulse/analog probe

## Getting Ready for Sampling

### To install the pulse/analog cartridge in the SDI

1. Prepare the SDI, pulse/analog cartridge, and a Phillips head screwdriver.
2. Loosen the two screws that secure the cover on the back of the SDI where the caution label is affixed, and remove the cover.

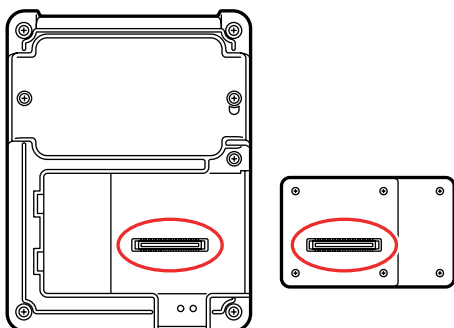


SMU-00613



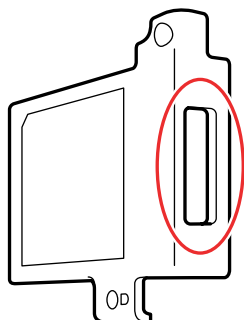
### 3. Install the pulse/analog cartridge in the SDI.

Take care that the connectors of the pulse/analog cartridge and the SDI are aligned correctly when you install the cartridge.



SMU-00614

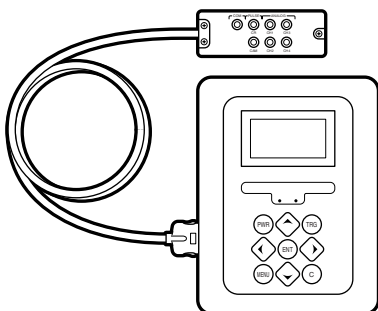
### 4. Remove the blind plug attached to the cover. The pulse/analog box connector will connect in at the location where you remove the blind plug.



SMU-00615

### 5. Correctly attach the cover and then tighten the two screws to secure it in place.

### 6. Connect the pulse/analog box at the location where you removed the blind plug on the SDI back cover.



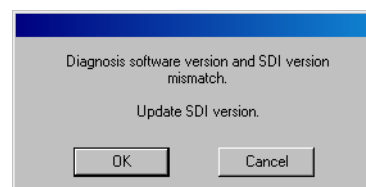
SMU-00616

### 7. Make sure that SDI power turns on normally to complete this procedure.

## Upgrading Your SDI Firmware

You need to update your SDI firmware version before performing analog sampling for the first time. You will not be able to perform analog sampling using an old SDI firmware version.

A screen like the one shown below will be displayed when you start analog sampling after installing the pulse/analog cartridge. Follow the instructions on the screen to update your firmware version. Please wait until the version update process is complete before trying to do anything else.



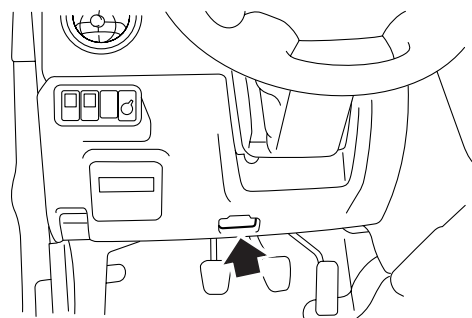
SMU-00617

## Starting a Sampling Operation

1. Prepare the SDI, diagnosis cable, USB cable, a PC with the PC application installed, the pulse/analog box, and the pulse/analog probe.
2. Use the diagnosis cable to connect the SDI to the data link connector of the vehicle.

### NOTE:

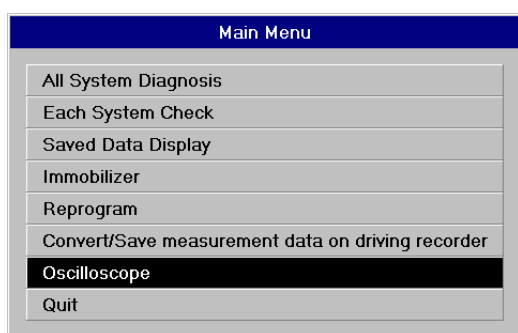
SDI power will turn on automatically when the diagnosis cable is connected to the vehicle. If the PWR LED of the SDI does not light, turn on the vehicle's ignition switch or start the engine, and then press the SDI [PWR] key and check again to see if the PWR LED of the SDI lights.



SMU-00113



3. Use the USB cable to connect the SDI to the PC.
4. Connect the pulse/analog box to the SDI.
5. Connect the pulse/analog probe to the pulse/analog box.
6. Connect the pulse/analog probe the location where you want to sample.
7. Turn on the vehicle's ignition switch.
8. Double-click the SSIII icon on the PC screen to start up the application.
9. On the Main Menu that appears on the display, select [Oscilloscope] and then press the [Enter] key or left-click with the mouse.



SMU-00618

10. This displays the Graph 1 screen and automatically starts sampling.



SMU-00619

## Configuring Analog Sampling Settings

When performing analog sampling, you should configure input range, screen range, and sampling

mode settings as required. You can save settings to a file for later load when you need them again.

### Selecting the Sampling Mode

You can select a sampling mode that continuously takes samples without stopping automatically, or a mode that stops sampling automatically after 5,000 data samples are obtained.

1. While sampling is stopped, click the **F5 Analog** button on the Function Key Bar or the F5 function key on the PC keyboard.



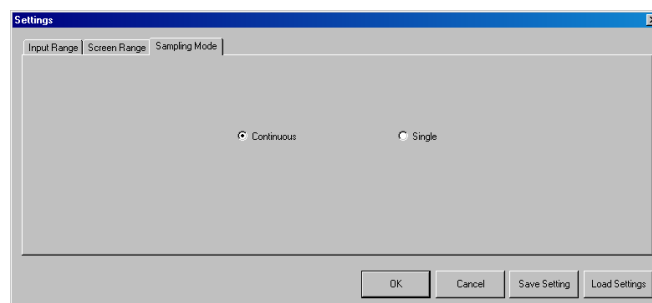
SMU-00621

2. On the setup screen that appears, click the [Sampling Mode] tab.

Select either [Continuous] or [Single] and then click the [OK] button.

When [Continuous] is selected, sampling will continue without stopping automatically.

With [Single], sampling will stop automatically after 5,000 data samples are obtained.



SMU-00622

### NOTE:

The initial default setting for the sampling mode is [Continuous]. Change the setting to [Single] as required.



## Setting the Screen Range

The screen range specifies the display range on your PC screen during sampling. There are two screen range settings available: “AUTO range settings”, which automatically adjusts the range in accordance with the input data range, and “User settings”, which lets you manually set the screen range you want.

1. While sampling is stopped, click the **F5 Analog** button on the Function Key Bar or the F5 function key on the PC keyboard.

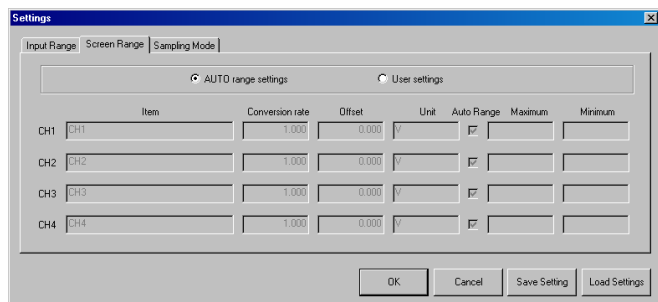


SMU-00621

2. On the setup screen that appears, click the [Screen Range] tab.

Configure the settings and then click the [OK] button.

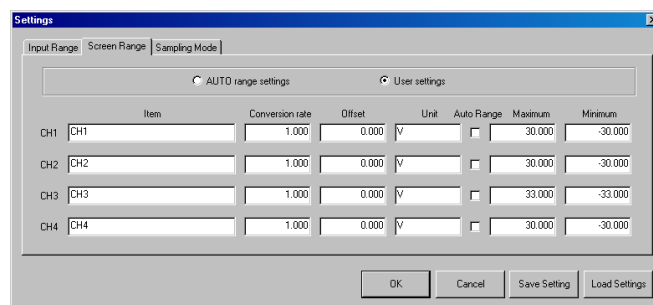
## AUTO range settings



SMU-00623

When “AUTO range settings” is selected, the screen range is adjusted automatically in accordance with input data.

## User settings



SMU-00624

With the “User settings”, you can specify desired values for each channel for data display. You can also specify a conversion rate to display data in physical values instead of simple voltage values.

### 1) Item

The input name appears on the measurement screen under “Item”.

### 2) Conversion Rate

This is a per Volt conversion value. For information about conversion rate values, see the user documentation that comes with the device you are using.

### 3) Offset

This is the offset of the converted value.

### 4) Unit

This specifies the unit.

### 5) Auto Range

Each channel can be individually configured with the auto range setting or with user settings. The channels you checked can be drawn by the auto range, based on the values calculated from conversion rates and the offsets.

### 6) Maximum

This specifies the maximum screen range setting.

### 7) Minimum

This specifies the minimum screen range setting.

## NOTE:

After inputting values or other information for a setting item, you can apply the setting by moving the mouse cursor to another input box or by pressing the [Enter] key on your PC keyboard. You can move the mouse cursor to another input box either by clicking with the mouse or by pressing the [Tab] key on your PC keyboard.



## Selecting the Input Range

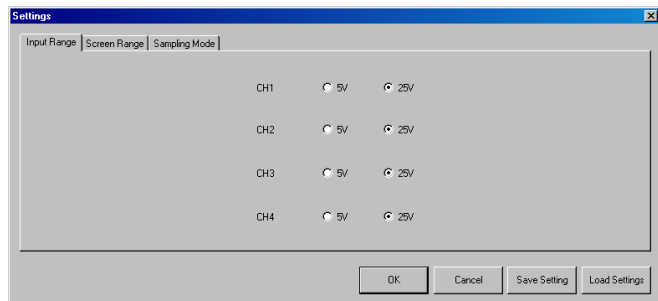
You can select either 5V or 25V as the input range, depending on the range of your input data.

1. While Sampling is stopped, click the **[F5] Analog** button on the Function Key Bar or the F5 function key on the PC keyboard.



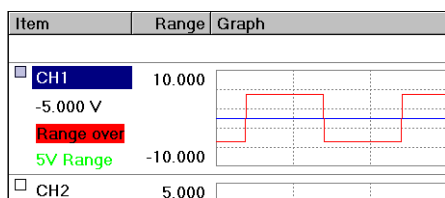
SMU-00621

2. This displays the setup screen. Select either 5V or 25V and then click the [OK] button.



SMU-00625

25V is the initial default setting. Change the setting to 5V as required. Leaving the input range set to 5V when the input data is greater than 5V will cause a "Range Over" message like the one shown below to appear. If this happens, change the input range setting to 25V.



SMU-00626

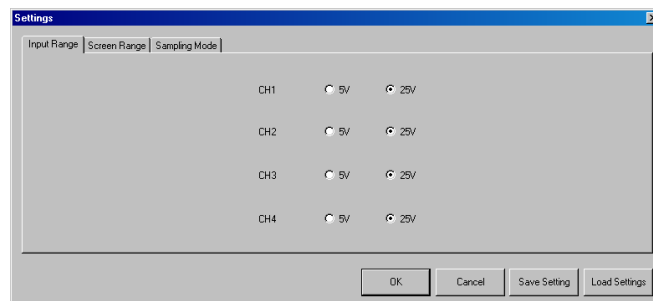
### NOTE:

The input range setting [5 V] has a higher resolution setting than the input range [25 V]. When measuring with an input within 5 V, measuring with higher accuracy is possible by selecting the input range setting [5 V].

## Saving a Setup

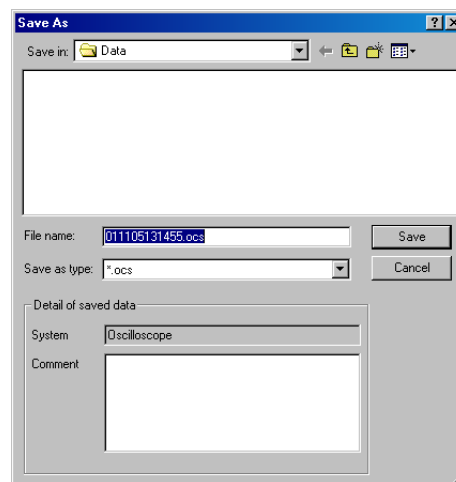
You can save a setup (input range, screen range, and sampling mode) for later load when you need it.

1. Display the analog sampling setup screen and then click the [Save Setting] button.



SMU-00625

2. This will display the setup data save dialog box. The name of the data file being saved is generated automatically in accordance with the current time and date. If you want to use the generated file name as-is, click the dialog box [Save] button. If you want to change to a different file name, type in the name you want.



SMU-00627

### NOTE:

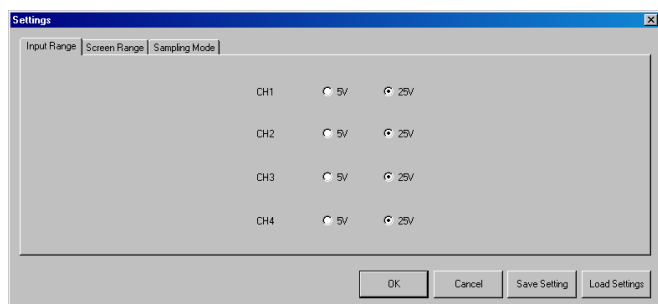
Clicking the [Save] button saves the settings of all of the tabs, regardless of which tab is currently displayed. Even if you click the [Save] button at the Input Range tab screen, for example, settings of the Screen Range and Sampling Range tab are also saved.



## Loading a Setup File

Use the following procedure to load a setup file and apply its input range, screen range, and sampling mode settings.

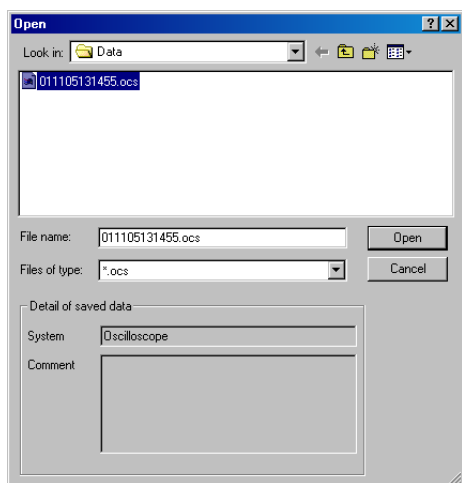
1. On the [Input Range], [Screen Range], or [Sampling Mode] tab of the setup screen, click the [Load Settings] button.



SMU-00625

2. This displays a dialog box with a list of saved set-up files.

Select the desired file and then press the [Enter] key or click [Open].



SMU-00628

### NOTE:

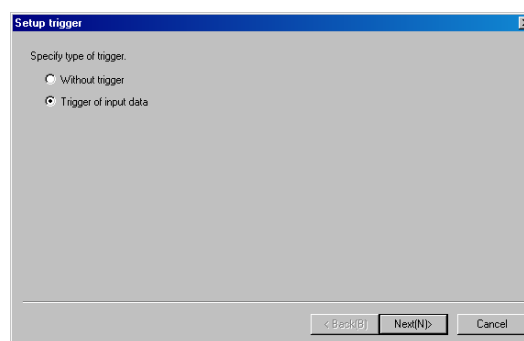
- When loading a setup file, select the file which displays “Oscilloscope” in System field in dialog box.
- Clicking the [Load Settings] button loads settings to all of the tabs, regardless of which tab is currently displayed. Even if you click the [Load Settings] button at the Input Range tab screen, for

example, settings of the Screen Range and Sampling Range tab are also loaded.

## Trigger Function

The trigger feature lets you configure a trigger to be applied while sampling is in progress. The only type of trigger supported is “Trigger of input data”, whereby you pre-configure trigger settings for a sampling item for automatic trigger detection. “Manual trigger” is not supported for analog sampling.

1. While sampling is stopped, click the **F4 Trigger** button on the Function Key Bar or the F4 function key on your PC keyboard.
2. This displays a trigger setup screen. Select “Trigger of input data” and then click the [Next] button.



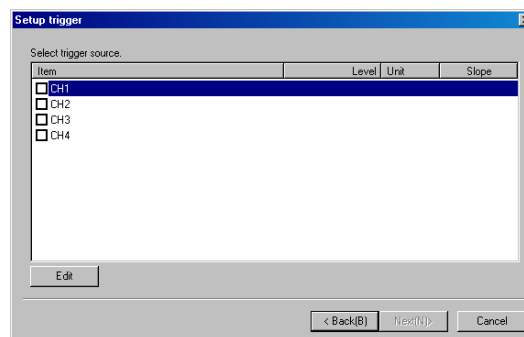
SMU-00630

### NOTE:

To turn off a trigger, select “Without trigger” on the above screen and then click the [Cancel] button.

3. Specify the trigger source.

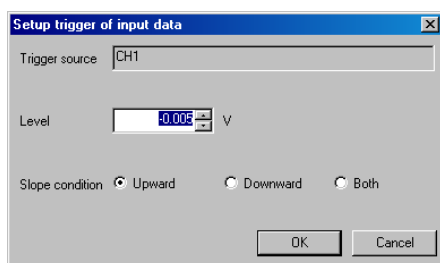
In the list, select the checkbox next to the channel you want to specify as the trigger source, or double-click the channel.



SMU-00631



4. This displays the Setup trigger of input data screen. Configure the settings and then click the [OK] button.



SMU-00632

The following describes the trigger settings you can configure.

#### 1) Level

This specifies the trigger level, the value that detects triggers. You can input a value directly into the box or use its up and down arrows to change the setting. The setting value is limited to values that can actually be obtained. If you type in a value that cannot be obtained, the software will automatically change it to the nearest allowable value.

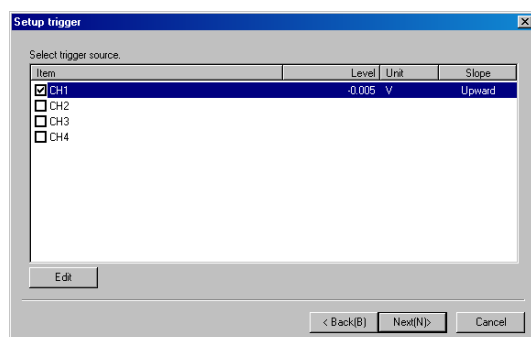
#### 2) Slope condition

This setting specifies the condition for trigger detection when the sample data values reach the trigger level. When [Both] is selected, a trigger is detected when either a Upward or Downward condition is first satisfied.

5. Checkboxes of the channels to which you set triggers are checked.

In the case of analog sampling, you can assign the trigger to only one channel.

If you do not need to change the details of the setting, click the [Next] button.

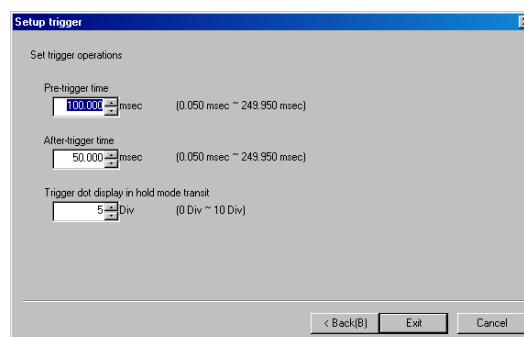


SMU-00633

#### NOTE:

To change a setting, select the desired item and then click the [Edit] button. On the Setup trigger of input data screen that appears, change the setting as desired.

6. This will display the trigger operation screen. Configure the settings and then click the [Exit] button.



SMU-00634

#### 1) Pre-trigger Time

This setting specifies until how much before, starting from the point when the trigger was detected, you wish to save the data. All data previous to the specified pre-trigger time is to be abandoned.

#### 2) After-Trigger Time

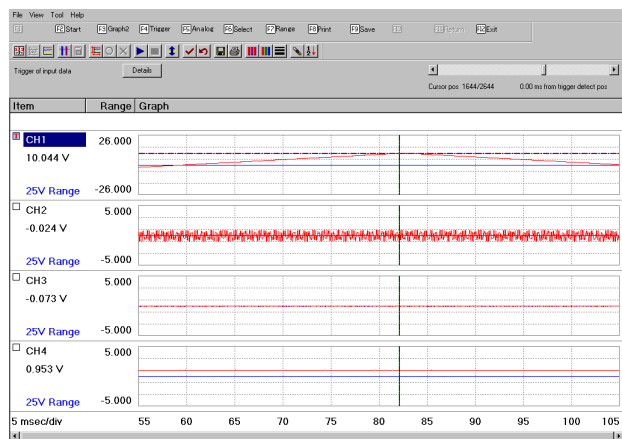
This setting is the sampling time after the trigger is detected.

#### 3) Trigger dot display in hold mode transit

This setting is the display location of the trigger point when sampling is complete.



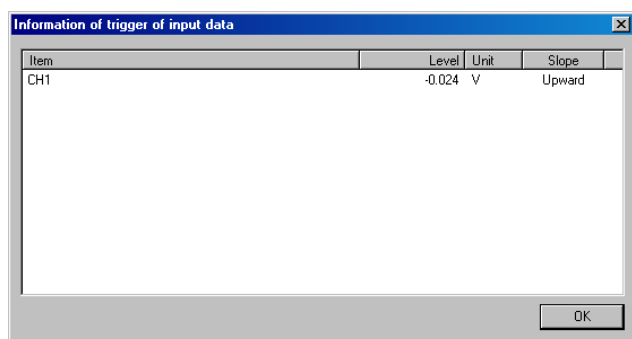
7. This will display the measurement screen and automatically start sampling. If the trigger is detected during sampling, data is collected for the specified time and then sampling stops automatically.



SMU-00772

#### NOTE:


- Assigning a trigger to an item causes “T” to appear in item’s checkbox.
- On the graph, the trigger level is indicated as a purple chain lines, while the trigger points are indicated by vertical green chain lines.
- Trigger information is displayed on the left side of the Sampling Status Bar. Clicking the [Details] button displays the Information of trigger of input data screen, which you can use to view detailed information about the currently assigned trigger.

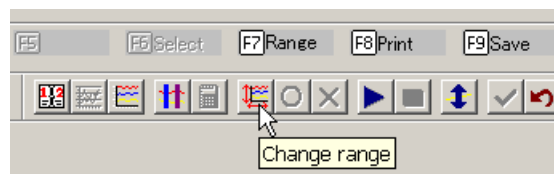


SMU-00636

## Changing the Range while Using Auto Range

You can use the following procedure to change the range manually, even if “AUTO range settings” is selected as the screen range setting.

1. While sampling is stopped, click the  icon on the Data List Toolbar or the [F7]Range button on the Function Key Bar. You could also press the F7 function key on the PC keyboard.



SMU-00585

2. After the screen below appears, input a value to specify the vertical axis range of the graph into the range box.

Range	Graph
30.000	
-30.000	
30.000	

SMU-00639

3. To specify the graph horizontal (time) axis range, click the range selection box in the lower left corner of the screen, and then select the desired time setting.


1 msec/div
2.5 msec/div
5 msec/div
10 msec/div
25 msec/div
50 msec/div
100 msec/div
250 msec/div
0.5 sec/div
1 sec/div
2.5 sec/div
5 sec/div
5 msec/div

SMU-00640

#### NOTE:


- Sampling cannot be performed with the time axis range set to 1 msec/div or 2.5 msec/div. The setting will change to 5 msec/div automatically if 1 msec/div or 2.5 msec/div is selected. The 1 msec/div and 2.5 msec/div settings are valid for analysis only.
- A longer time axis range causes a correspondingly slower sampling cycle.




4. After selecting the graph vertical axis and horizontal axis ranges, click the  icon on the Data List Toolbar or the **F11 OK** button on the Function Key Bar to apply the ranges. You can also apply the range settings by pressing the [F11] function key on the PC keyboard.

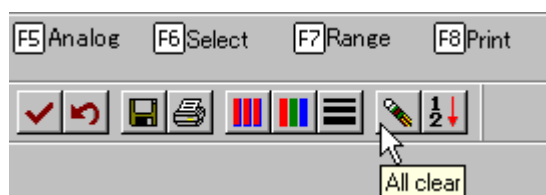


SMU-00586

To cancel the range change operation, click the  icon on the Data List Toolbar or the **F12 Cancel** button on the Function Key Bar. You can also cancel the range change operation by pressing the F12 function key on the PC keyboard.

## Initialize Item Settings

Clicking the  icon on the Data List Toolbar returns all item settings to the initial defaults as shown below.



SMU-00645

- Input Range: 25V
- Screen Range: AUTO range settings
- Sampling Mode: Continuous
- Time Axis: 5msec/div
- Trigger: Without trigger

## Other Operations

With analog sampling, the following tasks can be performed using the same procedures as those described under “Each System Check”. For details about procedures, see the section on this manual that explains the particular item.

1. The following functions can be available using the same procedures as described under “Current Data Display and Save”

- Sampling start and stop
- Digital Data Screen
- Graph 2 Screen
- Changing the Width of Screen Cells
- Changing the Item or Graph Sequence
- Initializing the Item or Graph Sequence
- Data Select Screen
- Returning to the All Data Screen
- Saving Sampled Data
- Printing Sampled Data
- Previewing the Print Image
- Setting Up the Printer
- Moving the Graph Cursor
- Changing the Graph Line Color
- Changing the Graph Line Thickness
- Marking Function

2. Two Cursor Analysis

3. Saved Data Display

4. Setting Screen Font, Display Unit and Display Language



## DST-i Analog Sampling

By using the oscilloscope probe, can be measured analog data.

### NOTE:

- In case of analog sampling, maximum 5,000 data can be saved.
- Since this device is a differential input device, minus (-) sampling is also supported. This device can be inputted from four channels using four pulse/analog probes. On the other hand, a minus input is shared and is one.
- You can carry out this function only when interface box to use is DST-i.

- The oscilloscope function software, you need to download from the homepage of DENSO.

Oscilloscope function, screen display language of the PC and stand-alone is the only English.

Download software and user's manual and specifications of the oscilloscope function, please refer to the following.

Specifications of the oscilloscope function:

[http://www.ds3.denso.co.jp/dst-i/dst-i\\_spec.html](http://www.ds3.denso.co.jp/dst-i/dst-i_spec.html)

User's manual of oscilloscope:

<http://www.ds3.denso.co.jp/dst-i/manuals.html>

Download of oscilloscope software:

<http://www.ds3.denso.co.jp/dst-i/setup/ja/software.html>



## SDI Control Module Analog Simultaneous Measurement

Analog data and control module data can be sampled simultaneously using the Pulse/Analog Kit (option).

### NOTE:

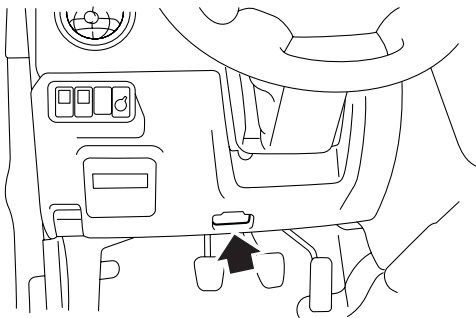
- This function cannot be used if the pulse/analog cartridge is not installed.
- See "SDI Analog Sampling" for handling precautions about Pulse/Analog Kit, how to install the pulse/analog cartridge in the SDI and how to update the SDI firmware.
- You can carry out this function only when interface box to use is SDI.

## Starting Control Module Analog Simultaneous Measurement

1. Prepare the SDI, diagnosis cable, USB cable, a PC with the PC application installed, the pulse/analog box, and the pulse/analog probe.
2. Use the diagnosis cable to connect the SDI to the data link connector of the vehicle.

### NOTE:

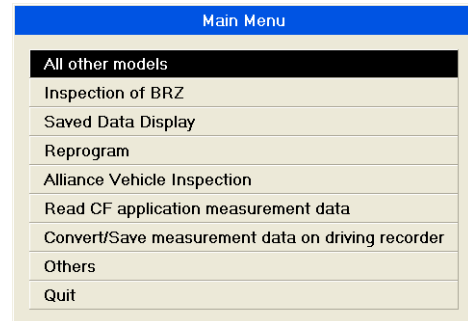
SDI power will turn on automatically when the diagnosis cable is connected to the vehicle. If the PWR LED of the SDI does not light, turn on the vehicle's ignition switch or start the engine, and then press the SDI [PWR] key and check again to see if the PWR LED of the SDI lights.



SMU-00014

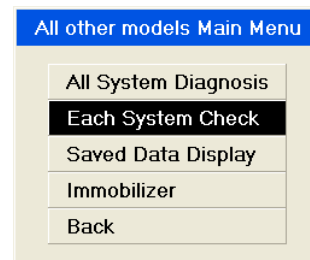
3. Use the USB cable to connect the SDI to the PC.
4. Connect the pulse/analog box to the SDI.
5. Connect the pulse/analog probe to the pulse/analog box.

6. Connect the pulse/analog probe to the location where you want to sample.
7. Turn on the vehicle's ignition switch.
8. Double-click the SSIII icon on the PC screen to start up the application.
9. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



SMU-01294

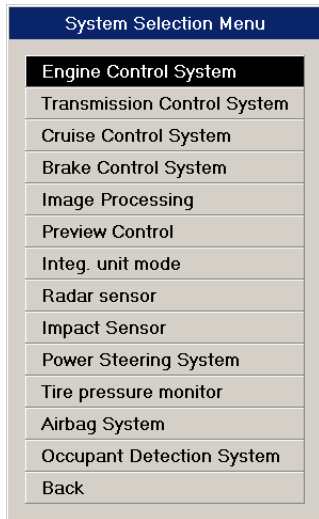
10. Select [Each System Check] at the item selection screen.



SMU-01296

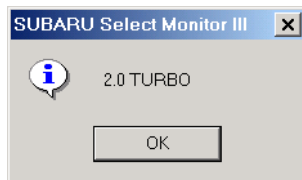


11. On the System Selection Menu, select the desired system and then press the Enter key or left-click with the mouse. (As an example, "Engine Control System" is selected.)



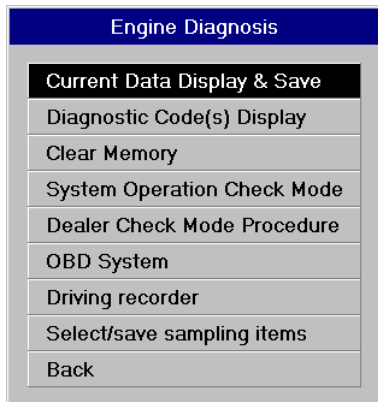
SMU-00665

12. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



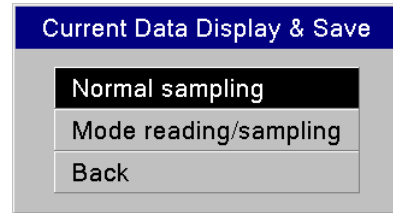
SMU-00128

13. From the list of fault diagnosis items, select [Current Data Display & Save] and then press the Enter key or left-click with the mouse.



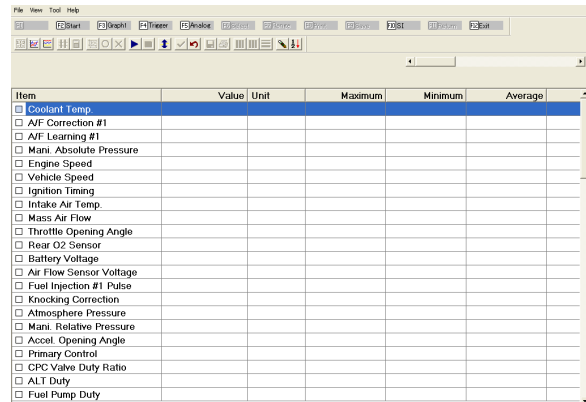
SMU-00601

14. This displays the dialog box shown below. Select [Normal sampling] and then press the Enter key or left-click with the mouse.



SMU-00508

15. This displays the sampling screen and automatically starts sampling. Stop this sampling.



SMU-00813

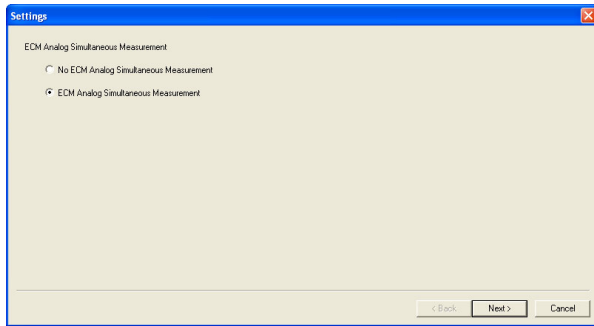
16. Click the [F5 Analog] button on the Function Key Bar, or press the F5 function key on the PC keyboard.



SMU-00815

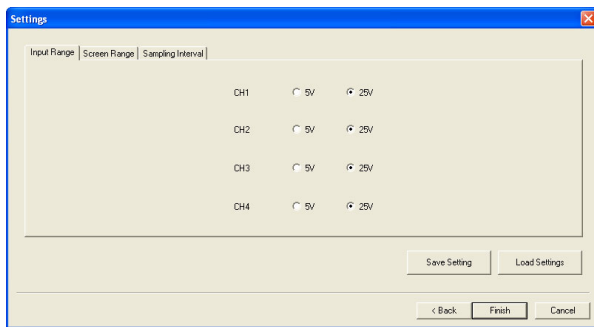


17. On the setup screen that appears, select “ECM Analog Simultaneous Measurement” and click the [Next] button.



SMU-00816

18. Select “Input Range” tab to configure the input range of analog data. Configure the desired range.

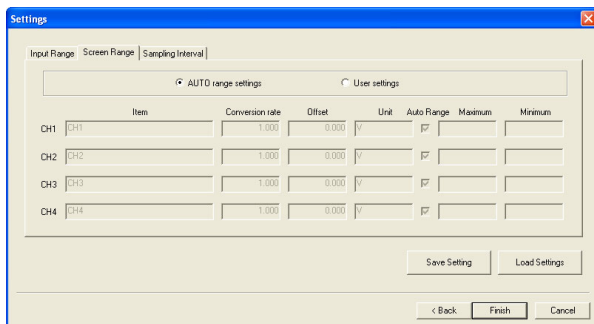


SMU-00832

**NOTE:**

For details about input range settings, see “Configuring Analog Sampling Settings” under “SDI Analog Sampling”.

19. Select “Screen Range” tab to configure the screen range of analog data. Configure the desired range.

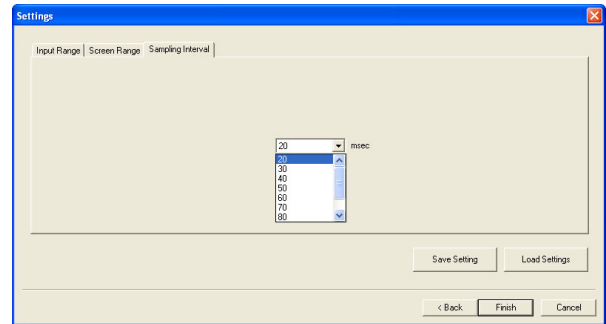


SMU-00833

**NOTE:**

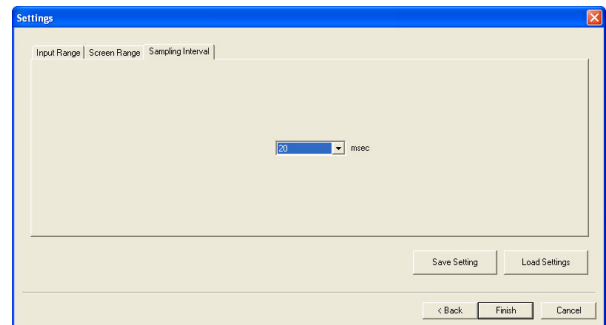
For details about screen range settings, see “Configuring Analog Sampling Settings” under “SDI Analog Sampling”.

20. Select “Sampling Interval” tab to configure the sampling interval of analog data. Select the desired interval from drop-down menu.



SMU-00834

21. After configuring the settings of all tabs, click the [Finish] button.

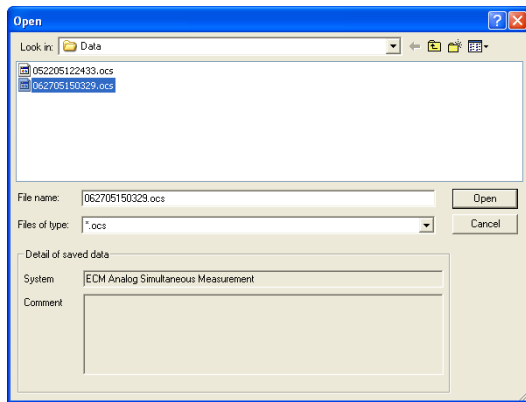


SMU-00835




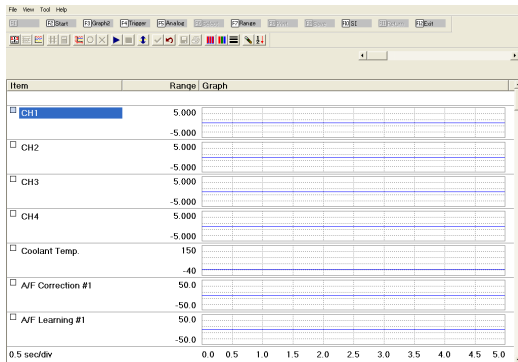
**NOTE:**

- You can save the settings of Input Range, Screen Range and Sampling Interval as a setup file, and load the saved setup file. This can be performed using the same procedures as those described in “Configuring Analog Sampling Settings” under “SDI Analog Sampling”. For this procedures, see the appropriate item.
- When loading a setup file, select the file which displays “ECM Analog Simultaneous Measurement” in System field in dialog box.



SMU-00819

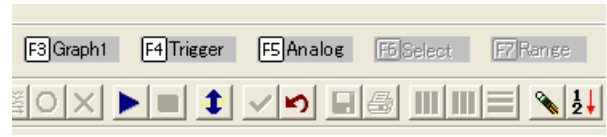
22. Start sampling by clicking  icon on the Data List Tool bar or the **[F2] Start** button on the Function Key Bar, or pressing the F2 function key on the PC keyboard.



SMU-00820

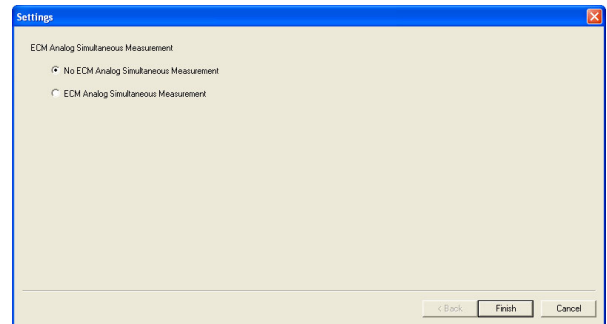
## Stopping Control Module Analog Simultaneous Measurement

- Click the **[F5] Analog** button on the Function Key Bar, or press the F5 function key on the PC keyboard.



SMU-00815

- On the setup screen that appears, select “No ECM Analog Simultaneous Measurement” and click the [Finish] button.



SMU-00821

## Trigger Function

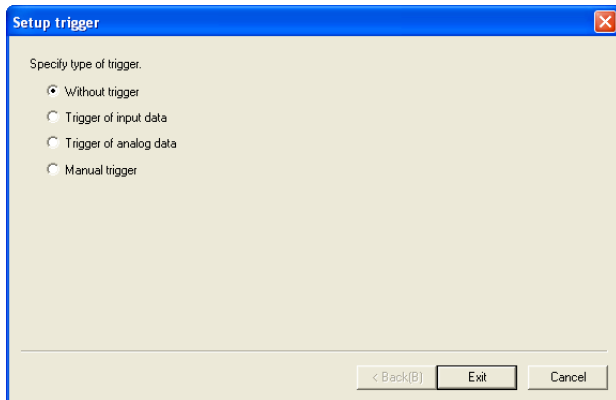
The trigger feature lets you configure a trigger to be applied while sampling is in progress. There are three trigger setting methods: “Trigger of input data”, where a trigger is set in advance to a sampling item and trigger detection is performed automatically for control module data, “Analogue data trigger” with automatic trigger detection for analogue data, and “Manual trigger” with manual trigger. When sampling is performed using a trigger, data is stored from the start of the sampling until the specified time from trigger detection elapses.

### Trigger setting

- While sampling is stopped, click the **[F4] Trigger** button on the Function Key Bar or the F4 function key on you PC keyboard.



2. This displays a trigger setup screen. Select “Trigger of input data” and then click the [Exit] button.



SMU-00896

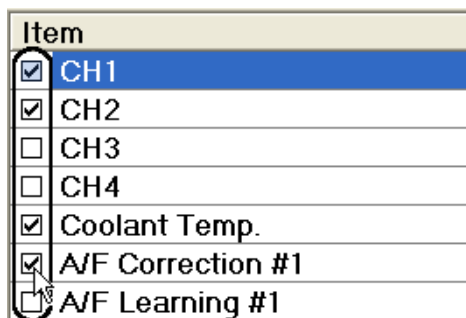
#### NOTE:

To turn off a trigger, select “Without trigger” on the above screen and then click the [Cancel] button.

3. For the following trigger setting methods, refer to the section “Trigger” of control module data sampling for “Trigger of input data” and “Manual trigger”, and refer to the section “Trigger Function” in “SDI Analog Sampling” for “Trigger Function”. However, this function does not have the setting “Pre-trigger time” on the trigger function for analogue sampling

## Data Select Screen



The Data Select Screen can be used to select particular data from all of the data sampled and view it. When there is no sampling operation being performed, click the check box in front of the item you want to view. An item is selected for viewing when there is a check mark inside its check box. You can also select (check) the checkbox of the highlighted item by pressing the space bar on the PC keyboard.



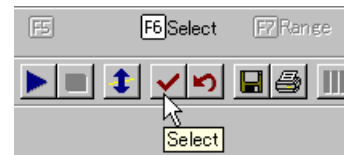
SMU-00822

#### NOTE:

Be sure to put one check mark or more on the sampling items of both control module data and analog data. The Select Screen cannot be displayed without check marks on both control module data and analog data.

Click the  icon on the Data List Toolbar or the  button on the Function Key Bar. This will display the selected items only.

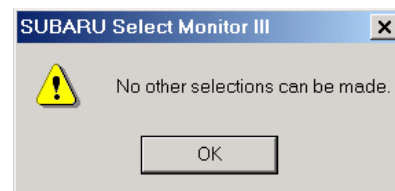
You can also display the selected items by pressing the F6 function key on the PC keyboard.



SMU-00575

#### NOTE:


- Displaying selected data causes data sampled up to that point to be deleted.
- Sampling is faster when specific data items are selected. (This applies only to engine and transmission sampling.)
- If the message dialog box shown below appears while you are selecting data items, it means that the limit on the number of selectable control module data items has been reached. (Not involved with the number of selected items for analog data) Selection of further control module data items is not possible after this message appears. To select other items, deselect the check boxes next to the currently selected (checked) items of control module data, and then select the new items.



SMU-00154



## Setting All Clear Function

Clicking the  icon on the Data List Toolbar returns all item settings to the initial defaults as shown below.

- Item sequence: default setting on each models
- Data Select Screen: all items not selected
- Horizontal axis range of Graph Screen: default setting on each item
- Vertical axis range of Graph Screen: 0.5 sec/div
- Graph line color of Graph Screen: all red
- Graph line thickness of Graph Screen: 1 point
- Trigger function: without trigger
- Two Cursor Analysis: end of Two Cursor Analysis
- Input Range: 25V
- Screen Range: AUTO range settings

## Other Operations

With control module Analog simultaneous measurement, the following tasks can be performed using the same procedures as those described under “Each System Check” or “SDI Analog Sampling”. For details about procedures, see the section on this manual that explains the particular item.

1. The following functions available using the same procedures as described under “Current Data Display and Save”
  - Sampling start and stop
  - Digital Data Screen
  - Graph Screen
  - Changing the Width of Screen Cells
  - Changing the Item or Graph Sequence
  - Initializing the Item or Graph Sequence
  - Returning to the All Data Screen
  - Saving Sampled Data
  - Printing Sampled Data
  - Previewing the Print Image
  - Setting Up the Printer
  - Moving the Graph Cursor
  - Changing the Graph Line Color
  - Changing the Graph Line Thickness
  - Marking Function
  - Graph Range Setting of control module Data
2. The following functions available using the same procedures as described under “SDI Analog Sampling”
  - Graph Range Setting of Analog Data
3. Two Cursor Analysis

### 4. Saved Data Display

### 5. Setting Screen Font, Display Unit and Display Language



## DST-i Control Module Analog Simultaneous Measurement

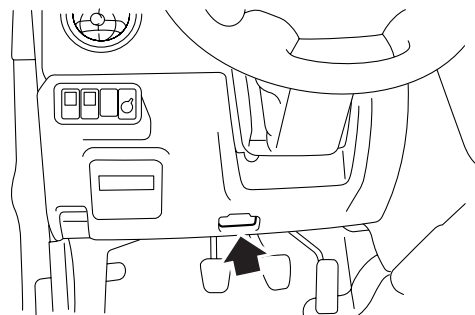
Analog data and control module data can be sampled simultaneously using the oscilloscope probe (option).

### NOTE:

- Handling Precautions of the oscilloscope probe. Refer to "DST-i Analog Sampling" section how to install the oscilloscope probe to DST-i.
- This function cannot be used if the oscilloscope probe is not installed.
- You can carry out this function only when interface box to use is DST-i.
- The oscilloscope function software, you need to download from the homepage of DENSO. Oscilloscope function, screen display language of the PC and stand-alone is the only English. Download software and user's manual and specifications of the oscilloscope function, please refer to the following.  
Specifications of the oscilloscope function:  
[http://www.ds3.denso.co.jp/dst-i/dst-i\\_spec.html](http://www.ds3.denso.co.jp/dst-i/dst-i_spec.html)  
User's manual of oscilloscope:  
<http://www.ds3.denso.co.jp/dst-i/manuals.html>  
Download of oscilloscope software:  
<http://www.ds3.denso.co.jp/dst-i/setup/ja/software.html>

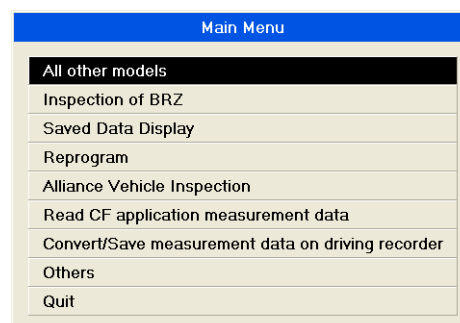
## Starting Control Module Analog Simultaneous Measurement

1. Prepare the DST-i, datalink cable, USB cable, and the oscilloscope probe.
2. Connect the oscilloscope probe to the DST-i.
3. Connect the oscilloscope probe to the location where you want to sample.
4. Use the datalink cable to connect the DST-i to the data link connector of the vehicle.



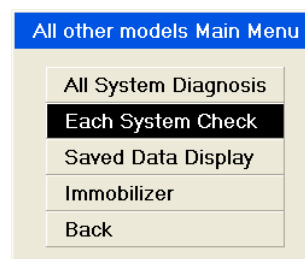
SMU-00113

5. Turn the mode switch of DST-i ON.
6. Turn on the vehicle's ignition switch
7. Double-click the SSMIII icon on the PC screen to start up the application.
8. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



SMU-01294

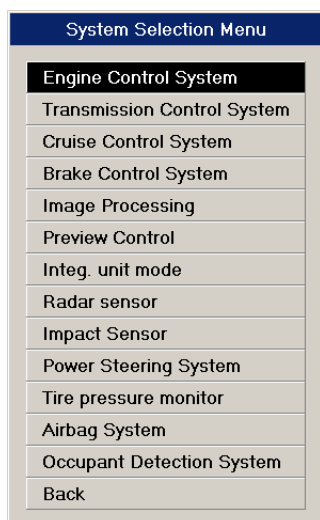
9. Select [Each System Check] at the item selection screen.



SMU-01296

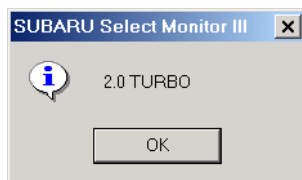


10. On the System Selection Menu, select the desired system and then press the Enter key or left-click with the mouse. (As an example, "Engine Control System" is selected.)



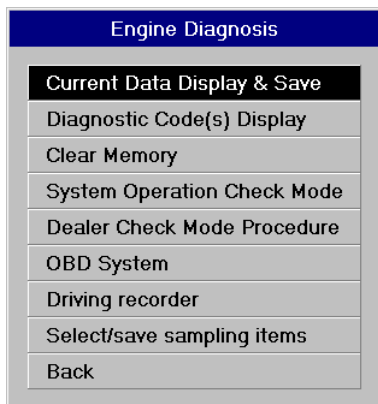
SMU-00665

11. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



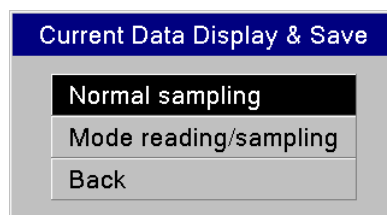
SMU-00128

12. From the list of fault diagnosis items, select [Current Data Display & Save] and then press the Enter key or left-click with the mouse.



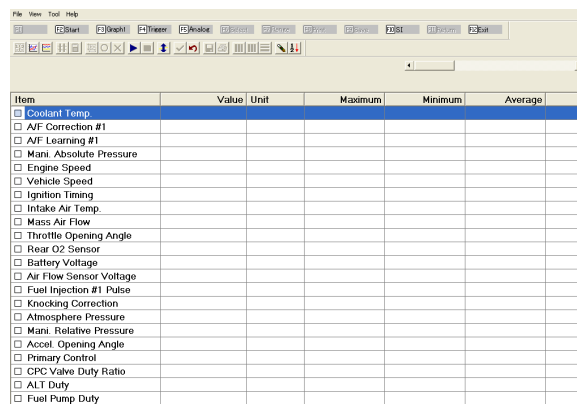
SMU-00601

13. This displays the dialog box shown below. Select [Normal sampling] and then press the Enter key or left-click with the mouse.



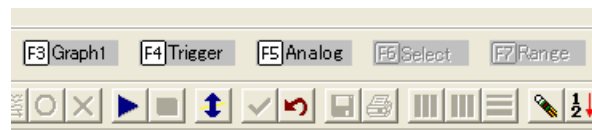
SMU-00508

14. This displays the sampling screen and automatically starts sampling. Stop this sampling.



SMU-00813

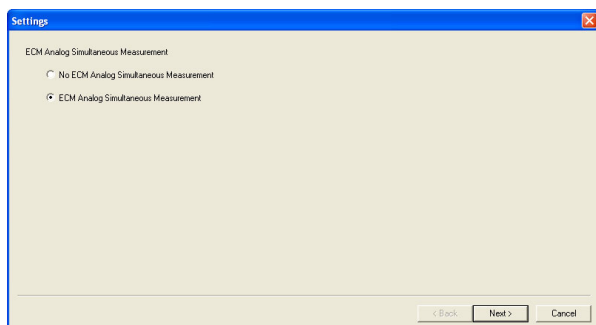
15. Click the [F5 Analog] button on the Function Key Bar, or press the F5 function key on the PC keyboard.



SMU-00815

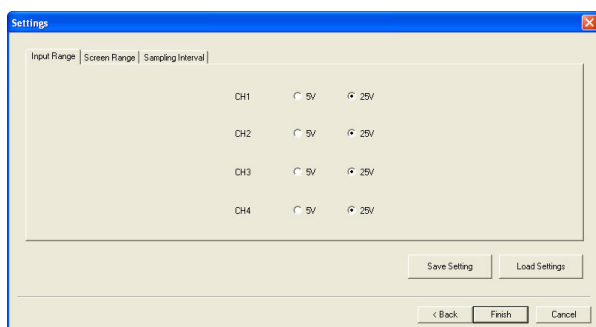


16. On the setup screen that appears, select "ECM Analog Simultaneous Measurement" and click the [Next] button.



SMU-00816

17. Select "Input Range" tab to configure the input range of analog data. Configure the desired range.

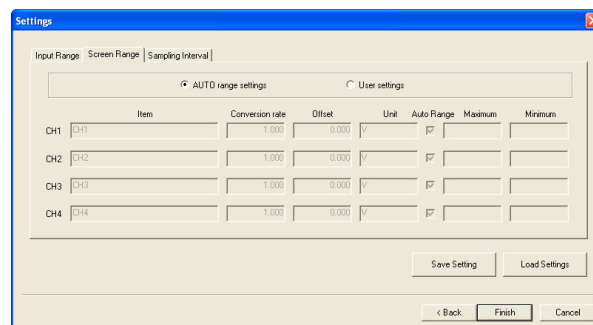


SMU-00832

#### NOTE:

For details about input range settings, see "Configuring Analog Sampling Settings" under "SDI Analog Sampling".

18. Select "Screen Range" tab to configure the screen range of analog data. Configure the desired range.



SMU-00833

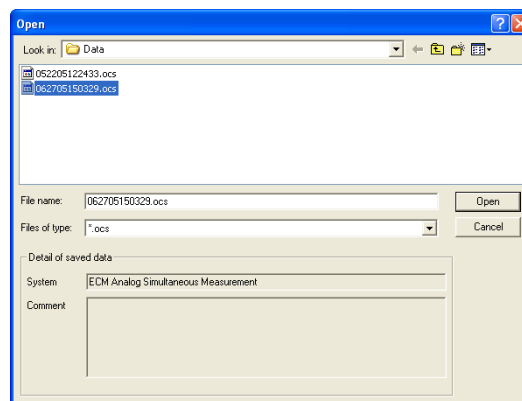
#### NOTE:

For details about screen range settings, see "Configuring Analog Sampling Settings" under "SDI Analog Sampling".

19. Configure the settings and then click the [Finish] button.


#### NOTE:

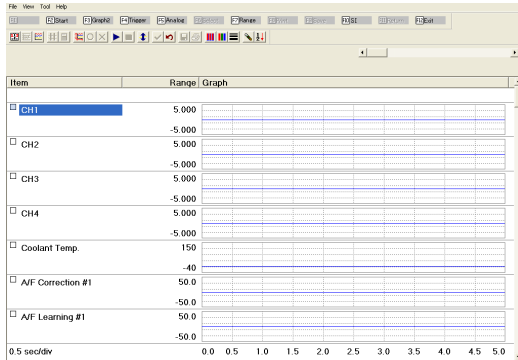
- Sampling Interval, This setting is not required for the fixed 31.25 ms.
- You can save the settings of Input Range, Screen Range and Sampling Interval as a setup file, and load the saved setup file. This can be performed using the same procedures as those described in "Configuring Analog Sampling Settings" under "SDI Analog Sampling". For this procedures, see the appropriate item.
- When loading a setup file, select the file which displays "ECM Analog Simultaneous Measurement" in System field in dialog box.



SMU-00819



20. Start sampling by clicking  icon on the Data List Tool bar or the **[F2]Start** button on the Function Key Bar, or pressing the F2 function key on the PC keyboard.



SMU-00820

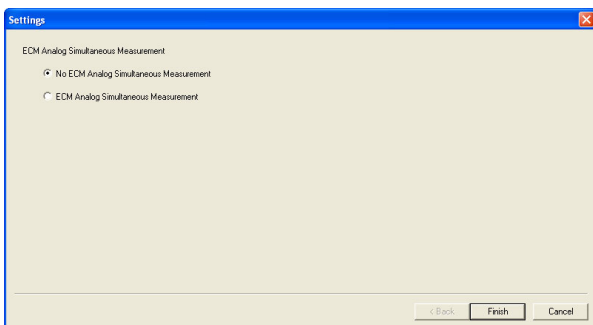
## Stopping Control Module Analog Simultaneous Measurement

1. Click the **[F5]Analog** button on the Function Key Bar, or press the F5 function key on the PC keyboard.



SMU-00815

2. On the setup screen that appears, select "No ECM Analog Simultaneous Measurement" and click the [Finish] button.



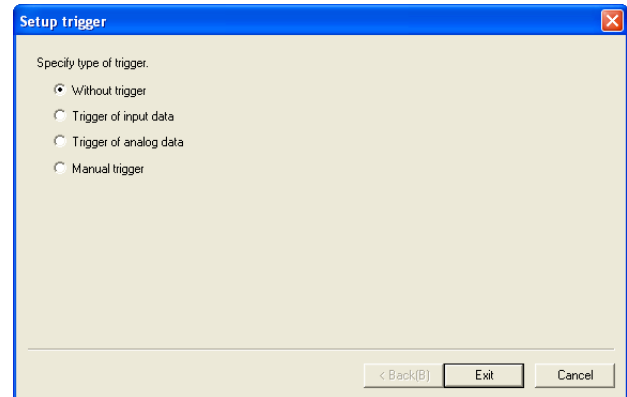
SMU-00821

## Trigger Function

The trigger feature lets you configure a trigger to be applied while sampling is in progress. There are three trigger setting methods: "Trigger of input data", where a trigger is set in advance to a sampling item and trigger detection is performed automatically for control module data, "Analogue data trigger" with automatic trigger detection for analogue data, and "Manual trigger" with manual trigger. When sampling is performed using a trigger, data is stored from the start of the sampling until the specified time from trigger detection elapses.

### Trigger setting

1. While sampling is stopped, click the **[F4]Trigger** button on the Function Key Bar or the F4 function key on your PC keyboard.
2. This displays a trigger setup screen. Select "Trigger of input data" and then click the [Exit] button.



SMU-00896

### NOTE:

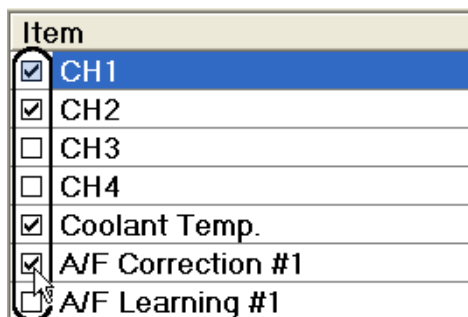
To turn off a trigger, select "Without trigger" on the above screen and then click the [Cancel] button.

3. For the following trigger setting methods, refer to the section "Trigger" of control module data sampling for "Trigger of input data" and "Manual trigger", and refer to the section "Trigger Function" in "SDI Analog Sampling" for "Trigger Function". However, this function does not have the setting "Pre-trigger time" on the trigger function for analogue sampling.



## Data Select Screen


The Data Select Screen can be used to select particular data from all of the data sampled and view it. When there is no sampling operation being performed, click the check box in front of the item you want to view. An item is selected for viewing when there is a check mark inside its check box. You can also select (check) the checkbox of the highlighted item by pressing the space bar on the PC keyboard.



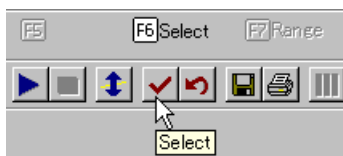
SMU-00822

### NOTE:

Be sure to put one check mark or more on the sampling items of both control module data and analog data. The Select Screen cannot be displayed without check marks on both control module data and analog data.

Click the  icon on the Data List Toolbar or the **F6>Select** button on the Function Key Bar. This will display the selected items only.

You can also display the selected items by pressing the F6 function key on the PC keyboard.

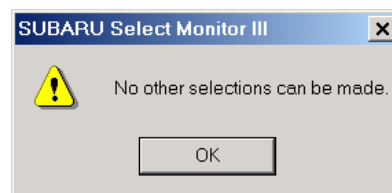


SMU-00575

### NOTE:


- Displaying selected data causes data sampled up to that point to be deleted.
- Sampling is faster when specific data items are selected. (This applies only to engine and transmission sampling.)

- If the message dialog box shown below appears while you are selecting data items, it means that the limit on the number of selectable control module data items has been reached. (Not involved with the number of selected items for analog data) Selection of further control module data items is not possible after this message appears. To select other items, deselect the check boxes next to the currently selected (checked) items of control module data, and then select the new items.



SMU-00154

## Setting All Clear Function

Clicking the  icon on the Data List Toolbar returns all item settings to the initial defaults as shown below.

- Item sequence: default setting on each models
- Data Select Screen: all items not selected
- Horizontal axis range of Graph Screen: default setting on each item
- Vertical axis range of Graph Screen: 0.5 sec/div
- Graph line color of Graph Screen: all red
- Graph line thickness of Graph Screen: 1 point
- Trigger function: without trigger
- Two Cursor Analysis: end of Two Cursor Analysis
- Input Range: 25V
- Screen Range: AUTO range settings

## Other Operations

With control module Analog simultaneous measurement, the following tasks can be performed using the same procedures as those described under "Each System Check" or "SDI Analog Sampling". For details about procedures, see the section on this manual that explains the particular item.

1. The following functions available using the same procedures as described under "Current Data Display and Save"
  - Sampling start and stop
  - Digital Data Screen
  - Graph Screen



- Changing the Width of Screen Cells
- Changing the Item or Graph Sequence
- Initializing the Item or Graph Sequence
- Returning to the All Data Screen
- Saving Sampled Data
- Printing Sampled Data
- Previewing the Print Image
- Setting Up the Printer
- Moving the Graph Cursor
- Changing the Graph Line Color
- Changing the Graph Line Thickness
- Marking Function
- Graph Range Setting of control module Data

2. The following functions available using the same procedures as described under "SDI Analog Sampling"

- Graph Range Setting of Analog Data

3. Two Cursor Analysis

4. Saved Data Display

5. Setting Screen Font, Display Unit and Display Language



## Roughness Monitor

Roughness monitor can be used to monitor combustion condition of each cylinder. There are three types for this function.

### 1) Simple Roughness Monitor

Simple Roughness Monitor displays the engine speed and count of misfire at each cylinder as well as normal SSIII data sampling.

### 2) High-Grade Roughness Monitor

High-Grade Roughness Monitor calculates standard deviation, engine speed, etc. based on pulse data of crankshaft position sensor and camshaft position sensor, and displays the value and graph.

Though the display screen of High-Grade Roughness Monitor is slightly different from normal one, basic procedure is identical. Refer to appropriate items for procedure which is not described in this section.

#### NOTE:

- Standard deviation is digitization of dispersion in rotation of all cylinders or each one. If this value is extremely higher than other cylinder, it determines that combustion condition is faulty. Besides, this function also displays average value of engine speed. If this value is extremely lower than other cylinder, it also determines that combustion condition is faulty.
- When you use the roughness monitor function, install the pulse/analog cartridge to SDI in advance. "Roughness Monitor" is not displayed in fault diagnosis items screen if pulse/analog cartridge is not installed.
- When taking out sensor signal, take out it from control module connector portion. Taking out around sensor may be affected by noise, leading to inaccurate measurement.
- Refer to Service Manual for connector terminal arrangement, wire color, etc. when taking out sensor signal.
- Be careful not to short the signal lines of crankshaft position sensor and camshaft position sensor.
- If the security software such as antivirus software is used, sampling time may be long when sampling with High-Grade Roughness Monitor. In this case, quit the security software before sampling.

### 3) High-Grade Roughness Monitor (pulse measurement is unnecessary)

High-Grade Roughness Monitor calculates standard deviation or engine speed from the data which acquired from Engine control module and display these values and graph.

Though the display screen of High-Grade Roughness Monitor (pulse measurement is unnecessary) is slightly different from normal one, basic procedure is identical. Refer to appropriate items for procedure which is not described in this section.

#### NOTE:

- Standard deviation is digitization of dispersion in rotation of all cylinders or each one. If this value is extremely higher than other cylinder, it determines that combustion condition is faulty. Besides, this function also displays average value of engine speed. If this value is extremely lower than other cylinder, it also determines that combustion condition is faulty.
- If the security software such as antivirus software is used, sampling time may be long when sampling with High-Grade Roughness Monitor (pulse measurement is unnecessary). In this case, quit the security software before sampling.
- This function is not supported in some vehicle models.

## Sampling with Simple Roughness Monitor

#### NOTE:

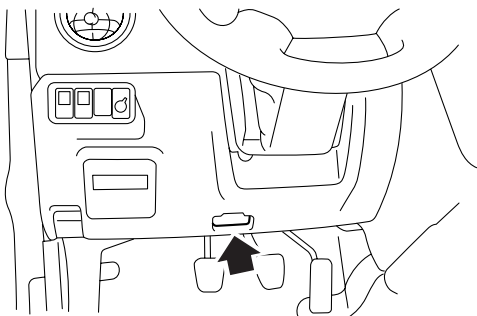
"Simple Roughness Monitor" cannot be used if there is not "Roughness Monitor" in normal engine Data Display.

1. Prepare the interface box, USB cable, PC with the SSIII application installed, diagnosis cable or datalink cable.
2. Use the diagnosis cable or datalink cable to connect the interface box to the datalink connector of the vehicle.



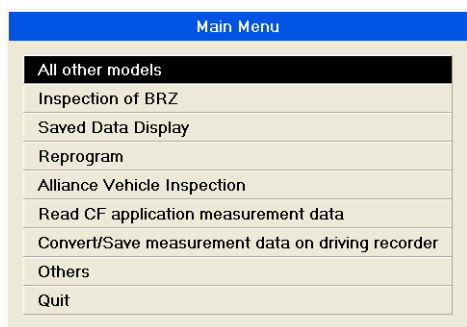
**NOTE:**

SDI power will turn on automatically when the diagnosis cable is connected to the vehicle. If the PWR LED of the SDI does not light, turn on the vehicle's ignition switch or start the engine, and then press the SDI [PWR] key and check again to see if the PWR LED of the SDI lights.



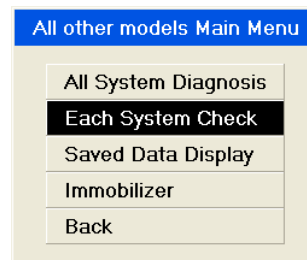
SMU-00014

3. Use the USB cable to connect the interface box to the PC.
4. Start the Engine.
5. Double-click the SSMIII icon on the PC screen to start up the application.
6. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



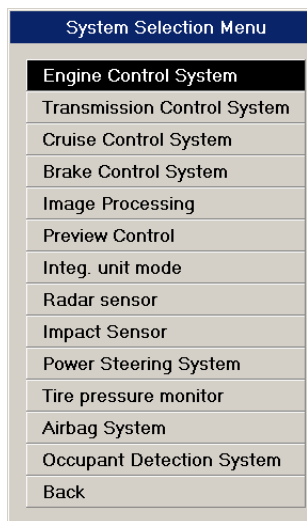
SMU-01294

7. Select [Each System Check] at the item selection screen.



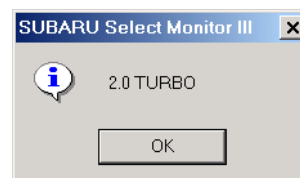
SMU-01296

8. On the System Selection Menu, select [Engine Control System] and then press the Enter key or left-click with the mouse.



SMU-00665

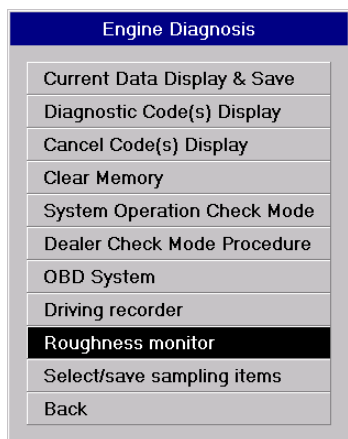
9. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00128

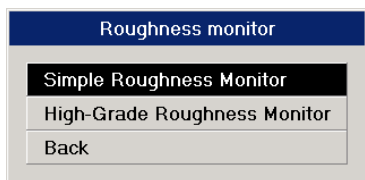


10. From the list of fault diagnosis items, select [Roughness Monitor] and then press the Enter key or left-click with the mouse.



SMU-00774

11. From the list of diagnosis items, select [Simple Roughness Monitor] and then press the Enter key or left-click with the mouse.

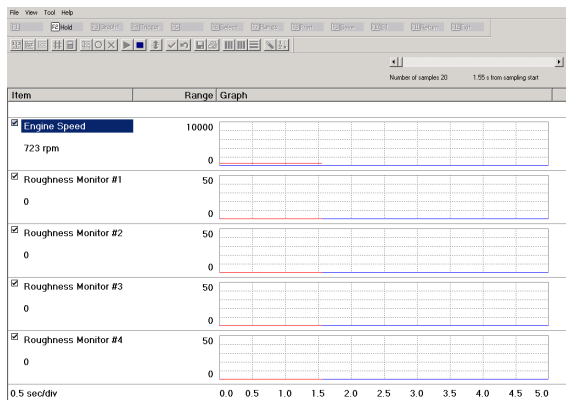


SMU-00775

**NOTE:**

“Simple Roughness Monitor” is not displayed if there is not “Roughness Monitor” in normal engine Data Display.

12. This displays the Graph Screen and automatically starts sampling.



SMU-00776

## Sampling with High-Grade Roughness Monitor

The High-Grade Roughness Monitor can perform “Auto sampling” and “Manual sampling”. Normally, “Auto sampling” is used.

**NOTE:**

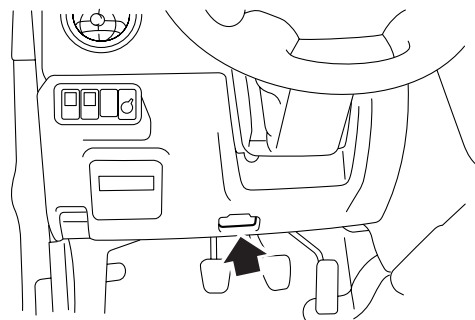
- You can carry out this function only when interface box to use is SDI.
- This function is not supported in some vehicle models.

### Auto Sampling

- Prepare the SDI, diagnosis cable, USB cable, a PC with the PC application installed, the pulse/analog box, and the pulse/analog probe.
- Use the diagnosis cable to connect the SDI to the data link connector of the vehicle.

**NOTE:**

SDI power will turn on automatically when the diagnosis cable is connected to the vehicle. If the PWR LED of the SDI does not light, turn on the vehicle's ignition switch or start the engine, and then press the SDI [PWR] key and check again to see if the PWR LED of the SDI lights.



SMU-00014

- Use the USB cable to connect the SDI to the PC.
- Connect the pulse/analog box to the SDI.
- Connect the signal line (positive side) of crankshaft position sensor to CR terminal of pulse/analog box using pulse/analog probe.

**NOTE:**

Take out sensor signal from control module connector portion. Taking out around sensor may be affected by noise, leading to inaccurate measurement.

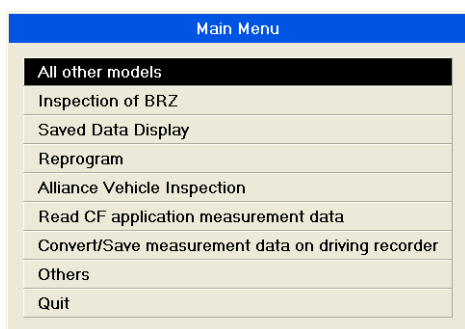


6. Connect the signal line (positive side) of camshaft position sensor to CAM terminal of pulse/analog box using pulse/analog probe.

**NOTE:**

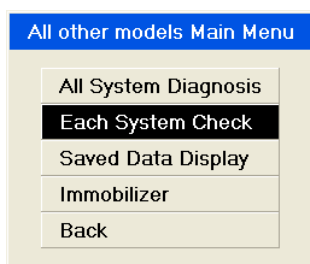
Take out sensor signal from control module connector portion. Taking out around sensor may be affected by noise, leading to inaccurate measurement.

7. Connect the ground lines (negative side) of control module to COM terminal of pulse/analog box using pulse/analog probe.
8. Start the Engine.
9. Double-click the SSMIII icon on the PC screen to start up the application.
10. Select [All other models] or [Inspection of BRZ] at the displayed main menu. (As an example, "All other models" is selected.)



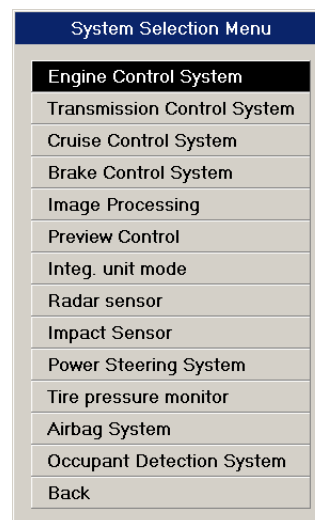
SMU-01294

11. Select [Each System Check] at the item selection screen.



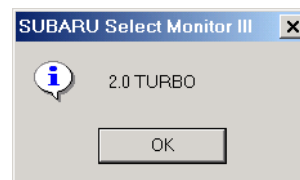
SMU-01296

12. On the System Selection Menu, select [Engine Control System] and then press the Enter key or left-click with the mouse.



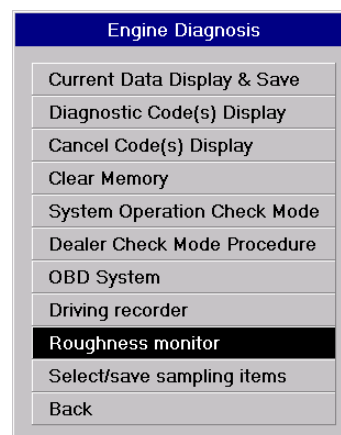
SMU-00665

13. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



SMU-00128

14. From the list of fault diagnosis items, select [Roughness Monitor] and then press the Enter key or left-click with the mouse.



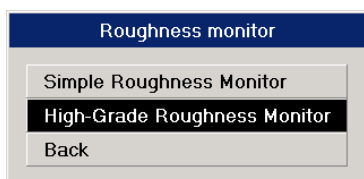
SMU-00774

**NOTE:**


"Roughness Monitor" is not displayed if the pulse/analog cartridge is not installed.

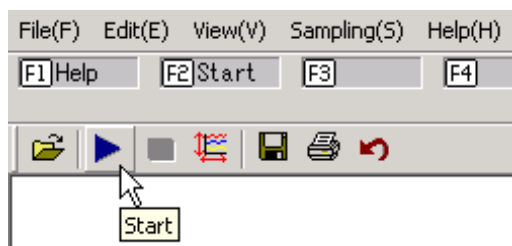


15. From the list of diagnosis items, select [High-Grade Roughness Monitor] and then press the Enter key or left-click with the mouse.



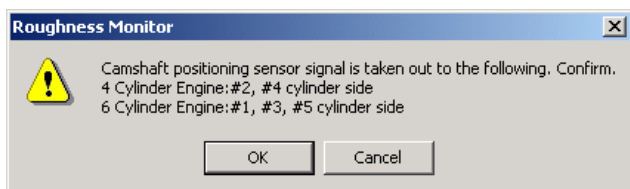
SMU-00777

16. This displays the High-Grade Roughness Monitor screen. Click  icon on the Data List Tool bar or the **[F2]Start** button on the Function Key Bar, or press the F2 function key on the PC keyboard. You can also start sampling by selecting “Auto Sampling” from “Sampling” in menu.




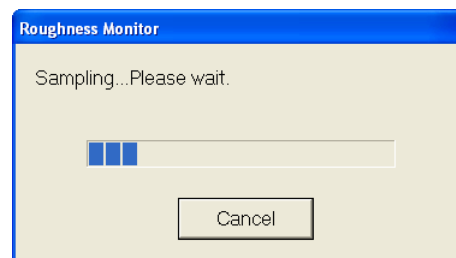
SMU-00778

17. This displays a verification message for the camshaft position sensor signal to be taken out. Confirm the signal to be taken out and then click the [OK] button.



SMU-00779

18. Stand by as sampling is started automatically. To cancel sampling, click the [Cancel] button. You can stop sampling also by clicking  icon on the Data List Tool bar or the **[F2]Stop** button on the Function Key Bar, or pressing the F2 function key on the PC keyboard.

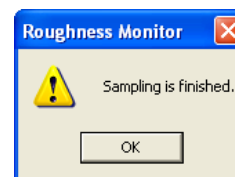


SMU-00851

#### NOTE:

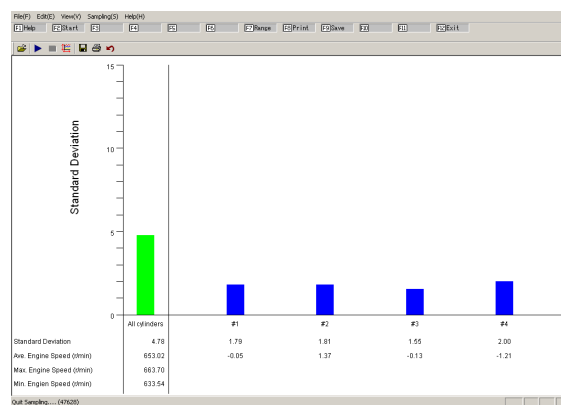
After dialog box above disappears, next dialog box may not appear immediately. Wait until it appears.

19. After sampling ends, a dialog box below will appear. Click the [OK] button.



SMU-00866

20. This displays the graph screen.





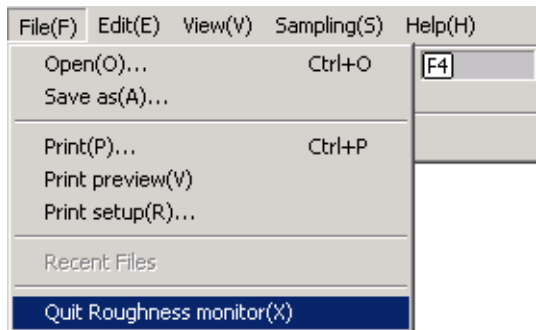
SMU-00782

#### NOTE:

Even if combustion condition is normal, extremely large standard deviation of all cylinders may occur due to variation in engine operation condition such as switching ON/OFF of radiator fan or A/C. In this case, perform sampling again.



21. If you want to quit Roughness Monitor, select "Quit Roughness Monitor" from "File" in menu, click  icon on the Data List Tool bar or  button on the Function Key Bar, or press the F12 function key on the PC keyboard.



SMU-00784

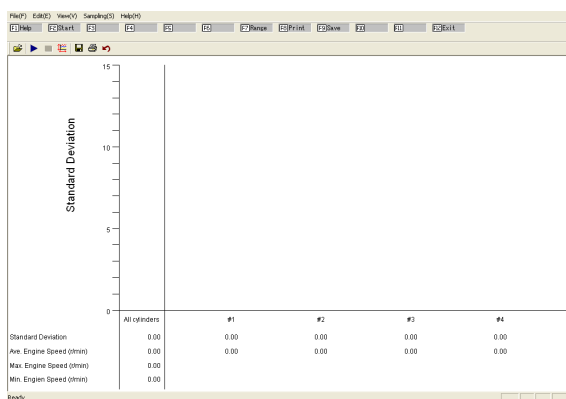
## Manual Sampling

Roughness Monitor can perform sampling for normal engine speed range automatically. If you want to sample other engine speed range, use Manual Sampling.

### NOTE:

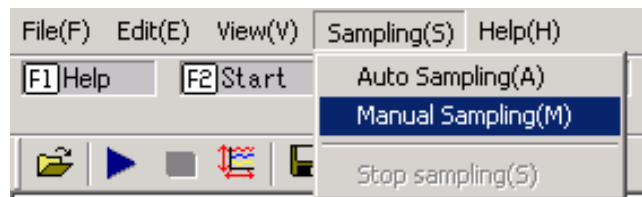
Perform Manual Sampling when minimum engine speed is below 400 rpm at Auto Sampling.

1. Display the High-Grade Roughness Monitor sampling screen.



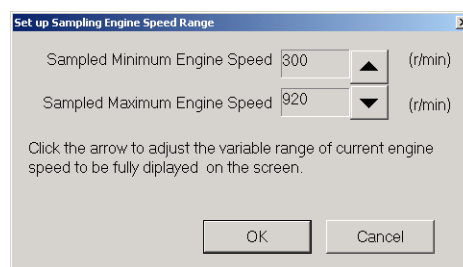
SMU-00785

2. Select "Manual Sampling" from "Sampling" in menu.



SMU-00786

3. This displays Set up Sampling Engine Speed Range screen. Operate the arrow button to configure the engine speed range and then click the [OK] button.

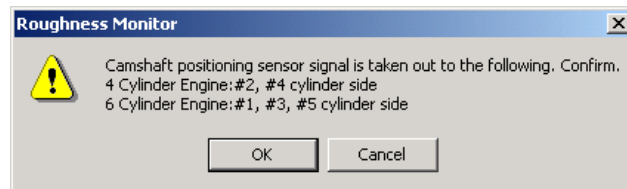


SMU-00787

### NOTE:



Set up the "Sampled Minimum Engine Speed" to 100 rpm less than minimum engine speed at Auto Sampling.

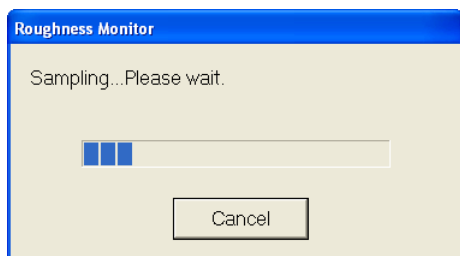
4. This displays a verification message for the camshaft position sensor signal to be taken out. Confirm the signal to be taken out and then click the [OK] button.



SMU-00779



5. Stand by as sampling is started automatically. To cancel sampling, click the [Cancel] button. You can stop sampling also by clicking  icon on the Data List Tool bar or the  button on the Function Key Bar, or pressing the F2 function key on the PC keyboard.

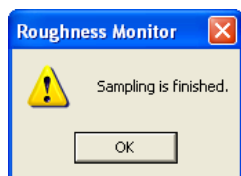


SMU-00851

**NOTE:**

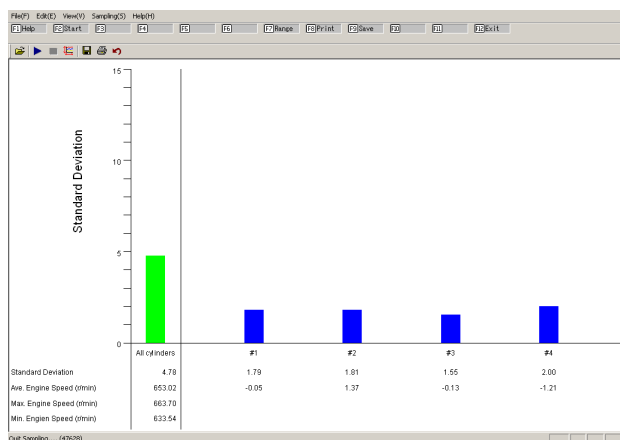
After dialog box above disappears, next dialog box may not appear immediately. Wait until it appears.

6. After sampling ends, a dialog box below will appear. Click the [OK] button.



SMU-00866

7. This displays the graph screen.



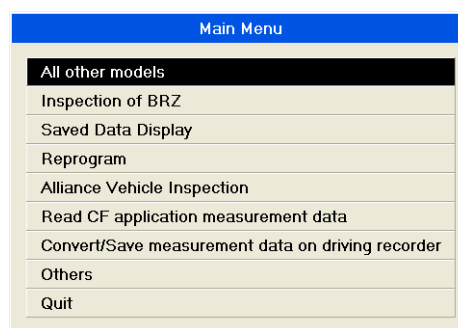
SMU-00782

## Sampling with High-Grade Roughness Monitor (pulse measurement is unnecessary)

**NOTE:**

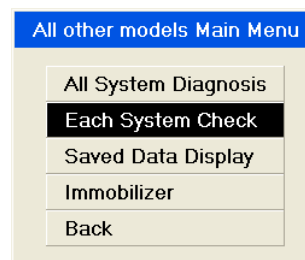
This function is not supported in some vehicle models.

1. Start the PC application according to section "Starting Up the System" and display the Main Menu screen.
2. Select [All other models] at the displayed main menu.



SMU-01294

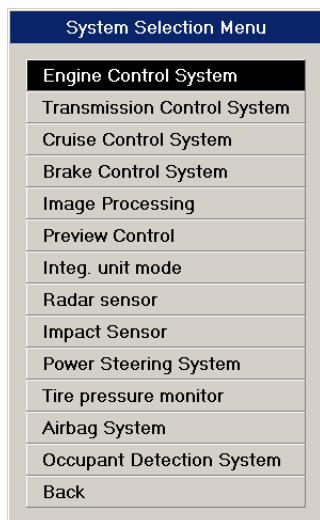
3. Select [Each System Check] at the item selection screen.



SMU-01296

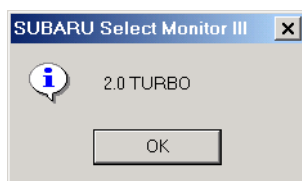


4. Select [Engine Control System] at the System Selection menu.



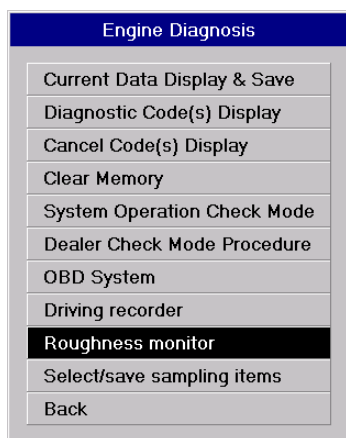
SMU-00665

5. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.




SMU-00128

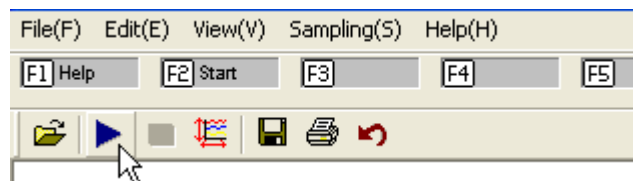
6. Select [Roughness Monitor] at the fault diagnosis items screen.




SMU-00774

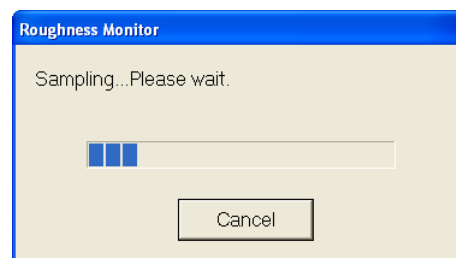
7. Select [High-Grade Roughness Monitor (pulse measurement is unnecessary)] at the fault diagnosis items screen.

8. This displays the High-Grade Roughness Monitor screen. Click  icon on the Data List Tool bar or the **[F2]Start** button on the Function Key Bar, or press the F2 function key on the PC keyboard.



SMU-01304

9. Stand by as sampling is started automatically. To cancel sampling, click the [Cancel] button. You can stop sampling also by clicking  icon on the Data List Tool bar or the **[F2]Stop** button on the Function Key Bar, or pressing the F2 function key on the PC keyboard.

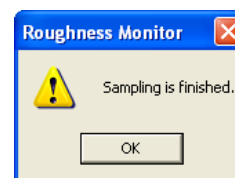


SMU-00851

**NOTE:**

After dialog box above disappears, next dialog box may not appear immediately. Wait until it appears.

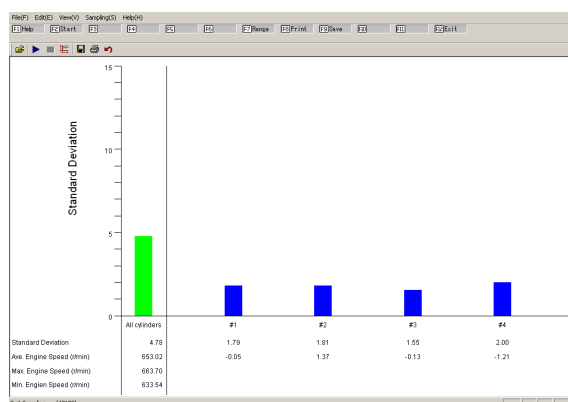
10. After sampling ends, a dialog box below will appear. Click the [OK] button.



SMU-00866





11. This displays the graph screen.

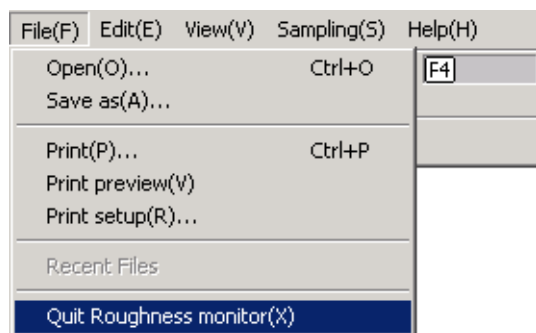


SMU-00782

#### NOTE:

Even if combustion condition is normal, extremely large standard deviation of all cylinders may occur due to variation in engine operation condition such as switching ON/OFF of radiator fan or A/C. In this case, perform sampling again.

12. If you want to quit Roughness Monitor, select "Quit Roughness Monitor" from "File" in menu, click  icon on the Data List Tool bar or  button on the Function Key Bar, or press the F12 function key on the PC keyboard.





SMU-00784

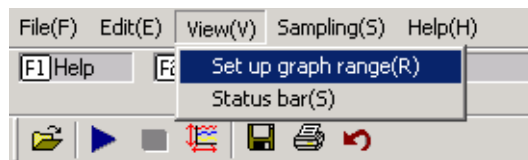
## Changing Graph Range

High-Grade Roughness Monitor sets the vertical axis range of the graph automatically after sampling, however you can configure the range manually.

#### NOTE:

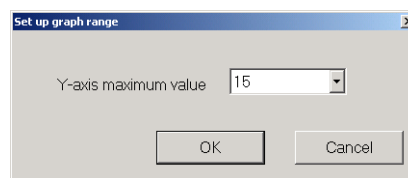
You can change the range at Simple Roughness Monitor using the same procedures as those described under "Current Data Display and Save". See the description.

1. Select "Set up Graph Range" from "View" in menu. You can also select by clicking  icon on the Data List Tool bar or the  button on the Function Key Bar, or pressing the F7 function key on the PC keyboard.



SMU-00790

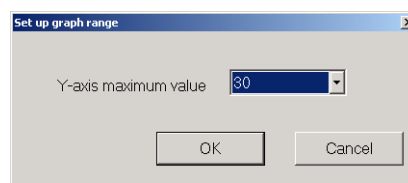
2. Click the arrow displayed in graph range setting screen.



SMU-00791

3. Select desired range and then click the [OK] button to apply the setting.

To cancel to change the range, click the [Cancel] button.



SMU-00792



## Saving Sampled Data

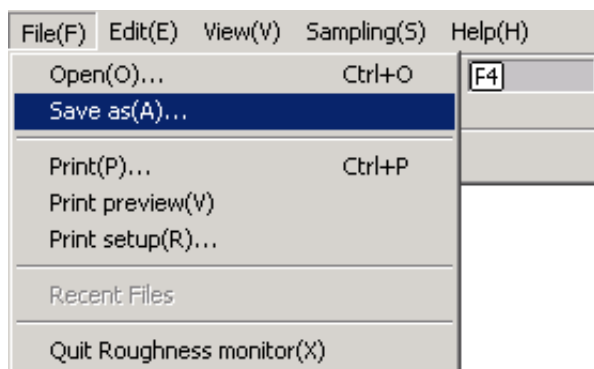
This explains how to save the sampled data with High-Grade Roughness Monitor.

#### NOTE:

You can save the data at Simple Roughness Monitor using the same procedures as those described under "Current Data Display and Save". See the description.



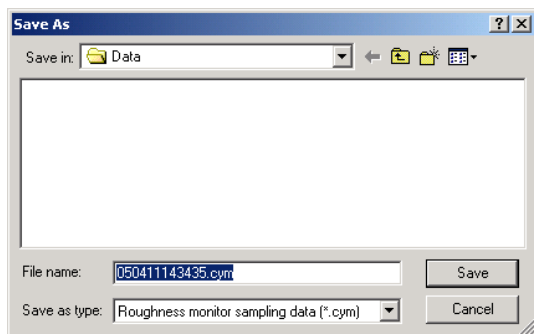
1. Select “Save as” from “File” in menu. You can also save by clicking  icon on the Data List Tool bar or the  button on the Function Key Bar, or pressing the F9 function key on the PC keyboard.



SMU-00795

2. This causes the sampled data save dialog box to appear.

The name of the data file being saved is generated automatically in accordance with the current time and date. If you want to use the generated file name as-is, click the dialog box [Save] button. If you want to change to a different file name, type in the name you want.



SMU-00796

#### NOTE:

Sample data files are saved in the Data folder where the PC application is installed. To change to another storage location, specify the location you want in the Save in box of the save data dialog box.

## Saved Data Display

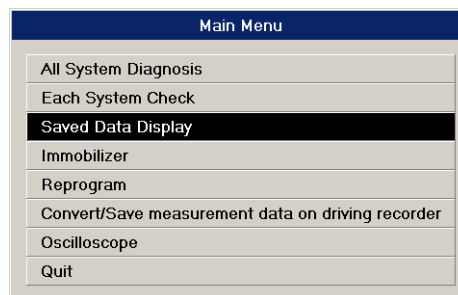
You can view the saved data by opening from Main Menu or from High-Grade Roughness Monitor.

#### NOTE:

To view the saved data at Simple Roughness Monitor, see “Saved Data Display”.

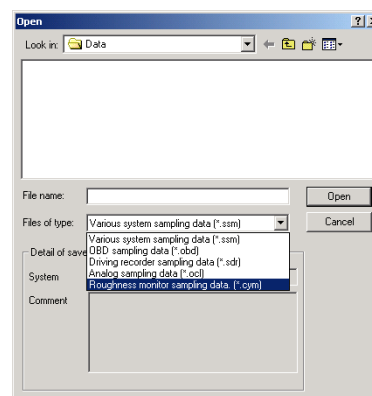
### Opening from Main Menu

1. From the Main Menu, select [Saved Data Display] and then press the Enter key or left-click with the mouse.



SMU-00602

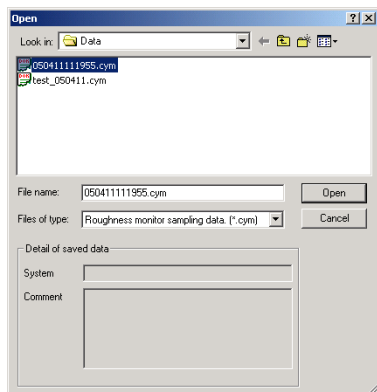
2. This displays the “Open file” dialog box. Click “File type” and select {Roughness monitor sampling data (\*.cym)}.



SMU-00797




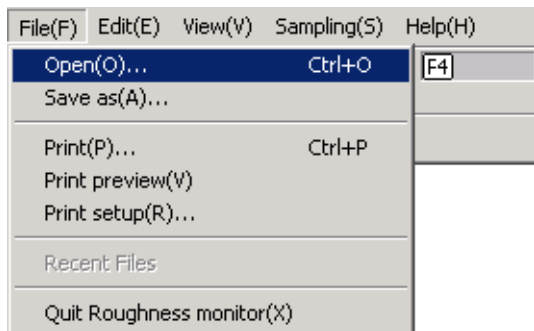
3. Select the desired file in list of files and click the [Open] button.



SMU-00798

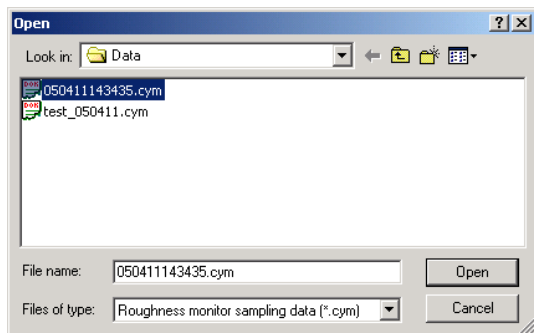
## Opening from High-Grade Roughness Monitor screen

1. Display the High-Grade Roughness Monitor screen, and select “Open” from “File” in menu or click  icon on the Data List Tool bar.



SMU-00799

2. This displays the “Open” dialog box. Select the desired file in list of files and click the [Open] button.



SMU-00800



## SDI Stand-alone Diagnosis

The SDI can be used for fault diagnosis in a stand-alone configuration without connecting to a PC.

You need to insert a CF card with the CF application installed on it into the card slot of the SDI in order to perform stand-alone diagnosis.

### NOTE:

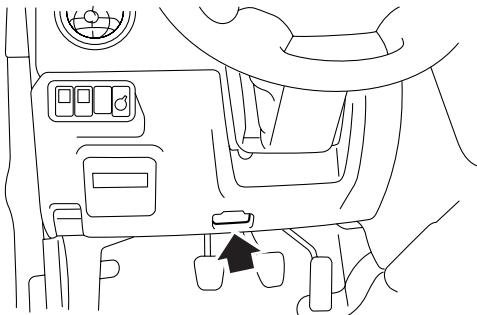
- Be sure to turn off SDI power (the PWR LED of the SDI goes out) before installing a CF card into or removing a CF card from its card slot. Inserting or removing a CF card while SDI power is turned on runs the risk of damaging CF card contents.
- You can carry out this function only when interface box to use is SDI.

## Getting Ready (Starting Up the SDI in Stand-alone Mode)

1. Insert a CF card that has the CF application installed into the CF1 card slot of the SDI.
2. Connect the main connector of the diagnosis cable to the diagnosis communication connector of the SDI.
3. Connect the vehicle connector of the diagnosis cable to the vehicle's data link connector, and confirm that the PWR LED of the SDI lights.

### NOTE:

SDI power will turn on automatically when the diagnosis cable is connected to the vehicle. If the PWR LED of the SDI does not light, turn on the vehicle's ignition switch or start the engine, and then press the SDI [PWR] key and check again to see if the PWR LED of the SDI lights.



SMU-00113

4. The software version screen will appear on the display, and then it will be replaced by the Initial Menu screen.

Use the [UP] and [DOWN] keys to select the desired item, and then press the [ENT] key.



SMU-00513

### NOTE:

- In case that the SDI operates as a Driving Recorder Mode, please shift it to a Stand-alone Mode by hold down both the [MENU] key and the [C] key of the SDI for at least two seconds.
- SDI power may turn off automatically (indicated when the PWR LED of the SDI goes out) if no SDI operation is performed for a preset period. If this happens, press the [PWR] key to turn the SDI back on.

To quit the stand-alone mode, select {Exit} on the Initial Menu screen and then press [ENT] key.



SMU-00516

### NOTE:

Exiting the Stand-alone Mode, if there is SDR Setting File on the CF card, the SDI enters the Driving Recorder Mode. However, if there is no SDR Setting File on the CF card, the SDI enters the Stand-alone Mode again. To enter the Driving Recorder Mode, please turn on the SDI after creating an SDR Setting File on the CF card.



## All Systems Diagnosis

Selecting this item displays the fault detect status of all control system control modules for which SSMIII diagnosis is supported, and memorized diagnostic codes.

When a particular control system cannot be identified as the causes of a vehicle's problem, perform this diagnosis and use the displayed diagnostic codes to perform diagnosis.

### NOTE:

- For a vehicle equipped with a cruise control system, turn on the cruise control switch before performing inspection.
- This inspection mode may not function in the case of certain vehicle models and vehicle specifications.

1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select {SUBARU Vehicle}, and then press the [ENT] key.



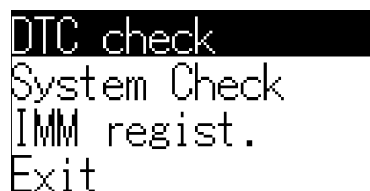
SUBARU Vehicle  
Function Setup  
Self Check  
Exit

SMU-00513

2. This causes the Menu Selection screen to appear.

Use the [UP] and [DOWN] keys to select {DTC check}, and then press the [ENT] key.

To return to the Initial Menu screen, press the [C] key or select {Exit} and then press the [ENT] key.



DTC check  
System Check  
IMM regist.  
Exit

SMU-00760

3. The SDI displays the screen shown below when the control system and communication system are started up.

To terminate the diagnosis operation, press the [C] key.

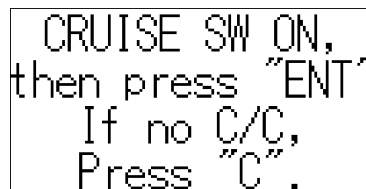


Communicating  
"C" to Cancel

SMU-00420

4. The screen shown below will appear. For a vehicle equipped with a cruise control system, turn on the cruise control main switch and then press the [ENT] key. For a vehicle that does not have cruise control, simply press the [C] key.

This screen may not be displayed in the case of certain vehicle specifications.



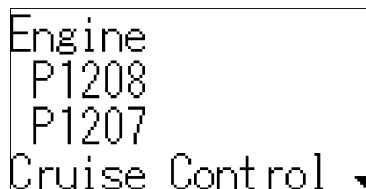
CRUISE SW ON,  
then press "ENT"  
If no C/C,  
Press "C".

SMU-00444

5. The display shows the fault codes that are remembered by each control module.

Use the [UP] and [DOWN] keys to scroll screen contents.

To exit the fault code display, press the [C] key.



Engine  
P1208  
P1207  
Cruise Control ▼

SMU-00445



## Diagnostic Codes Check on Each System

### Getting Ready

This type of inspection allows selection of a particular system from among the control system for which SSMIII diagnosis is supported. Then memorized diagnostic codes and other data can be viewed on the SDI display.

1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select {SUBARU Vehicle}, and then press the [ENT] key.

```
SUBARU Vehicle
Function Setup
Self Check
Exit
```

SMU-00513

2. This causes the Menu Selection screen to appear.

Use the [UP] and [DOWN] keys to select {System Check}, and then press the [ENT] key. To return to the Initial Menu screen, press the [C] key or select {Exit} and then press the [ENT] key.

```
DTC check
System Check
IMM regist.
Exit
```

SMU-00735

3. This causes the System Selection screen to appear.

Use the [UP] and [DOWN] keys to select {Engine}, and then press the [ENT] key. (For this example, "Engine" is selected.)

To return to the Menu Selection screen, press the [C] key.

```
Engine
Transmission
Cruise Control
Brake Control ▼
```

SMU-00447

4. This displays a compliance verification message for the system being diagnosed. Press the [ENT] key.

```
2.5 SOHC

Press "ENT"
```

SMU-00448

5. This causes the Fault Diagnosis Menu screen to appear.

Use the [UP] and [DOWN] keys to select {DTC check}, and then press the [ENT] key.

Press [C] key to return to the System Selection screen.

```
Engine
Data Display
DTC check
CancelCode Disp▼
```

SMU-01032

### Data Display

This system allows sampling of control module input/output data of control systems for which SSMIII diagnosis is supported, and sampling of control data.

1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select {SUBARU Vehicle}, and then press the [ENT] key.

```
SUBARU Vehicle
Function Setup
Self Check
Exit
```

SMU-00513



2. This causes the Menu Selection screen to appear.

Use the [UP] and [DOWN] keys to select {System Check}, and then press the [ENT] key.

To return to the Initial Menu screen, press the [C] key or select {Exit} and then press the [ENT] key.

```
DTC check
System Check
IMM regist.
Exit
```

SMU-00735

3. This causes the System Selection screen to appear.

Use the [UP] and [DOWN] keys to select {Engine}, and then press the [ENT] key. (For this example, "Engine" is selected.)

To return to the Menu Selection screen, press the [C] key.

```
Engine
Transmission
Cruise Control
Brake Control ▼
```

SMU-00447

4. This displays a compliance verification message for the system being diagnosed. Press the [ENT] key.

```
2.5 SOHC

Press "ENT"
```

SMU-00448

5. This causes the Fault Diagnosis Menu screen to appear.

Use the [UP] and [DOWN] keys to select {Data Display}, and then press the [ENT] key.

Press [C] key to return to the System Selection screen.

```
Engine
Data Display
Clear Memory
```

SMU-00736

6. This displays the current data.

Press [C] key to return to the Fault Diagnosis Menu screen.

```
Coolant
Temp.
85°C
A/F
Correction
#1
0.8% ▼
```

SMU-00737

### Data Select Screen

The Data Select Screen can be used to select particular data from all of the data sampled and view it.

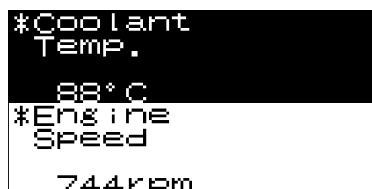
1. Select the sampled items you want to view, and press [TRG] key. This causes asterisk (\*) to appear on the selected items.

```
*Coolant
Temp.
85°C
A/F
Correction
#1
-1.6% ▼
```

SMU-00738



2. After selecting the sampled items you want to view, press the [ENT] key. This causes only sampled items with asterisk to appear.



SMU-00739

To return to the All Data Screen, press the [ENT] key again.


#### NOTE:

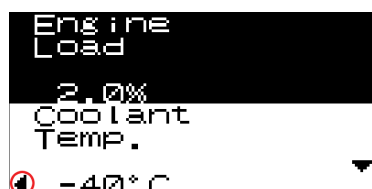
The selected sampled items (with asterisk) are saved even if the SDI power is turned off. At the next starting up, the items will remain selected.

### RUN/HOLD Mode

Past sampling data can be displayed for analysis by temporarily stopping measuring.

To switch to the HOLD Mode, hold down both the [RIGHT] and [LEFT] key of the SDI for at least two seconds.

When the HOLD mode, “” is displayed under the left of the SDI screen.



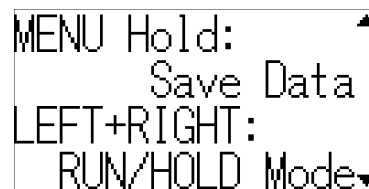
SMU-01145

Use the [RIGHT] and [LEFT] keys to move the time axis, past sampling data can be displayed for analysis.

To turn off the HOLD mode, hold down both the [RIGHT] and [LEFT] key of the SDI for at least two seconds again.

#### NOTE:

- The measurement stops during the HOLD mode. It is necessary to switch to the RUN mode to re-start the measurement.
- It is possible to save the measured data at the HOLD mode too.
- Select [HELP] on the MENU Selection screen to confirm how to operate.



SMU-01146

### Saving Sampled Data

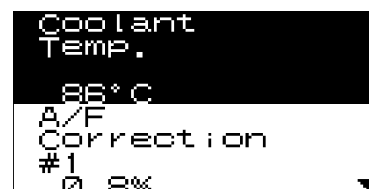
You can save sampled data on stand-alone diagnosis as well. You can save sampled data, which is stored in CF card, to hard disk of your PC in order to analyze.

#### NOTE:

- Sampled data saved in a CF card cannot be analyzed. For analysis, the data needs to be saved in a PC.
- Cannot save sampling data if free space on a CF card is less than 10MB. If so, delete unnecessary data in the CF card or replace it with another CF card, which has enough space.

### How to save in a CF card

1. Display the current data. (Engine is taken as an example.)

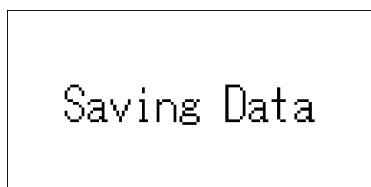


SMU-00737

2. Hold down the [MENU] key of the SDI for at least two seconds.

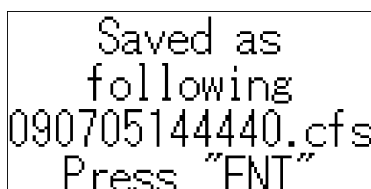


3. Stand by as the message below will appear on the SDI screen.



SMU-00839

4. In response to the save confirmation screen that appears, press the [ENT] key.



SMU-00840

## Save data stored in a CF card to a PC.

This explains how to save sampled data stored in a CF card to hard disk of your PC.

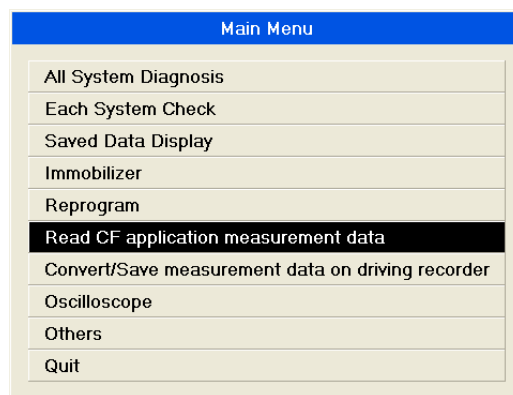
Sampled data can be read from a CF card in the card slot of the SDI or in the card slot of a PC.

### NOTE:

Be sure to turn off SDI power before installing a CF card into or removing a CF card from its card slot. Inserting or removing a CF card while SDI power is turned on runs the risk of damaging CF card contents.

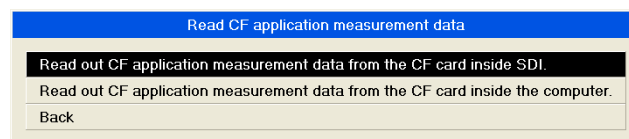
## To read data from a card slot of the SDI

1. On the Main Menu, select the {Read CF application measurement data}.



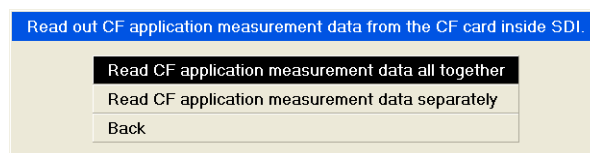
SMU-00841

2. On the Read CF application measurement data screen, select the {Read out CF application measurement data from the CF card inside SDI}.



SMU-00842

3. On the Read out CF application measurement data from the CF card inside SDI screen, select the {Read CF application measurement data all together} or {Read CF application measurement data separately}.

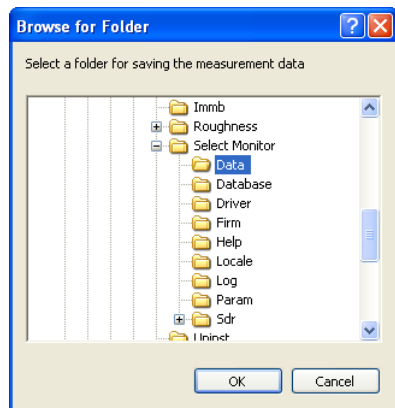


SMU-00843



<If you selected “Read CF application measurement data all together” in Step 3.>

4. Select the directory to save sampled data, which was read out from the CF card. Select the desired directory, and then click the [OK] button.



SMU-00844

#### NOTE:

- On the initial setting, sample data files are saved in the Data folder where the PC application is installed.
- The name of the data file being saved is generated automatically in accordance with the time and date of saving in CF card.
- After the sampled data is saved in a PC, that in CF card will be deleted automatically.

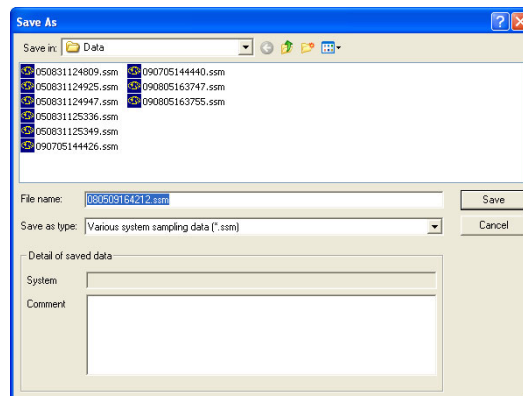
5. After all of the sampled data in the CF card are saved, a screen below will appear. Click the [OK] button.



SMU-00845

<If you selected “Read CF application measurement data separately” in Step 3.>

4. This causes the sampled data save dialog box to appear. The name of the data file being saved is generated automatically in accordance with the time and date of saving in CF card. If you want to use the generated file name as-is, click the dialog box [Save] button. If you want to change to a different file name, type in the name you want.



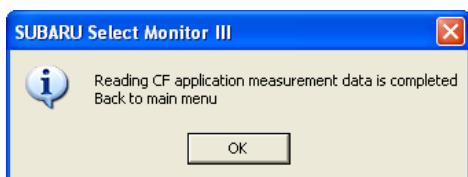
SMU-00846

#### NOTE:

- Sample data files are saved in the Data folder where the PC application is installed. To change to another storage location, specify the location you want in the Save in box of the save data dialog box.
- The Comment box of the Save As dialog box can be used to save general comments associated with the data or file.
- After the sampled data is saved in a PC, that in CF card will be deleted automatically.

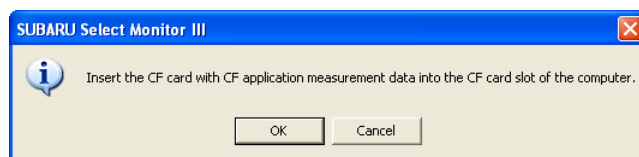


5. After all of the sampled data in the CF card are saved, a screen below will appear. Click the [OK] button.



SMU-00845

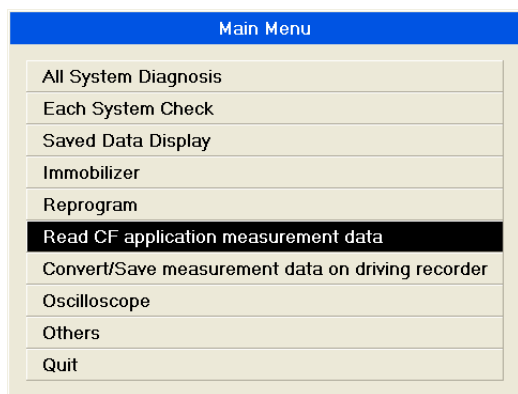
3. Insert the CF card that contains the sampling data into the card slot of the PC. Click the [OK] button.



SMU-00848

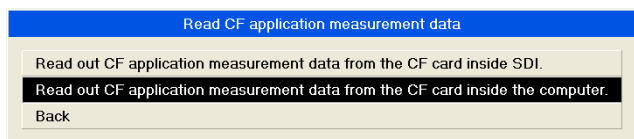
## To read data from a card slot of the PC

1. On the Main Menu, select the {Read CF application measurement data}.



SMU-00841

2. On the Read CF application measurement data screen, select the {Read out CF application measurement data from the CF card inside the computer}.



SMU-00847

### NOTE:

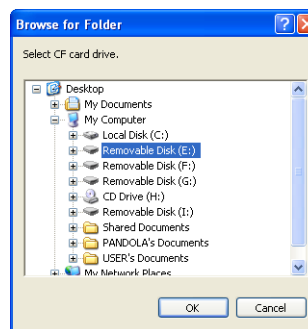
If the PC has no CF card slot, make use of a card reader etc. to setup the CF card on the PC.

4. When the dialog box shown below appears, click the [OK] button.



SMU-00849

5. Select the drive where the CF card is located, and then click the [OK] button.



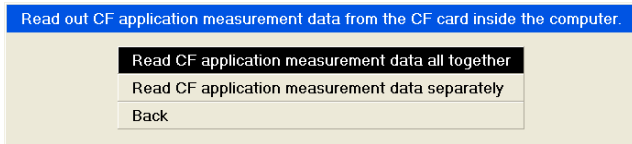
SMU-00850

### NOTE:

If the drive which contains a CF card is not displayed at this time, restart the PC application and repeat the procedure from step 1.



6. On the Read out CF application measurement data from the CF card inside the computer screen, select the {Read CF application measurement data all together} or {Read CF application measurement data separately}.



SMU-00852

**<If you selected “Read CF application measurement data all together” in Step 6.>**

7. Select the directory to save sampled data, which was read out from the CF card. Select the desired directory, and then click the [OK] button.

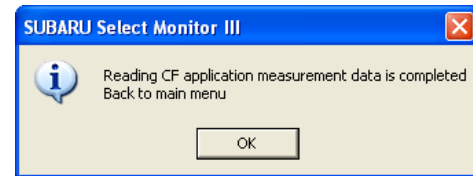


SMU-00844

**NOTE:**

- On the initial setting, sample data files are saved in the Data folder where the PC application is installed.
- The name of the data file being saved is generated automatically in accordance with the time and date of saving in CF card.
- After the sampled data is saved in a PC, that in CF card will be deleted automatically.

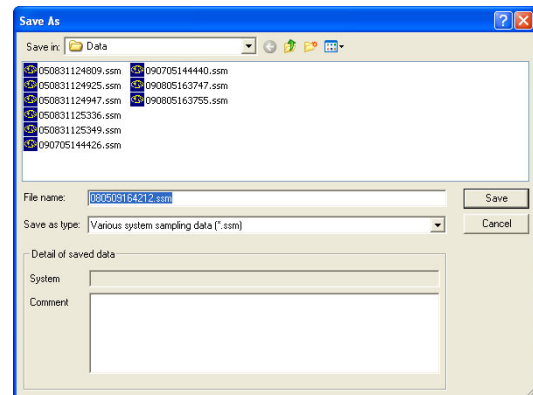
8. After all of the sampled data in the CF card are saved, a screen below will appear. Click the [OK] button.



SMU-00845

**<If you selected “Read CF application measurement data separately” in Step 6.>**

7. This causes the sampled data save dialog box to appear. The name of the data file being saved is generated automatically in accordance with the time and date of saving in CF card. If you want to use the generated file name as-is, click the dialog box [Save] button. If you want to change to a different file name, type in the name you want.



SMU-00846

**NOTE:**

- Sample data files are saved in the Data folder where the PC application is installed. To change to another storage location, specify the location you want in the Save in box of the save data dialog box.
- The Comment box of the Save As dialog box can be used to save general comments associated with the data or file.
- After the sampled data is saved in a PC, that in CF card will be deleted automatically.



8. After all of the sampled data in the CF card are saved, a screen below will appear. Click the [OK] button.



SMU-00845

## Clearing Memory

Use the following procedure to delete the diagnostic codes memorized by the control modules of each system after correcting the fault.

1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select {SUBARU Vehicle}, and then press the [ENT] key.

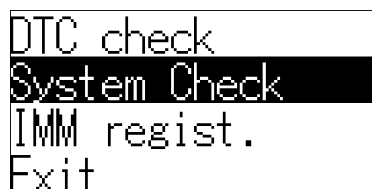


SMU-00513

2. This causes the Menu Selection screen to appear.

Use the [UP] and [DOWN] keys to select {System Check}, and then press the [ENT] key.

To return to the Initial Menu screen, press the [C] key or select {Exit} and then press the [ENT] key.



SMU-00735

3. This causes the System Selection screen to appear.

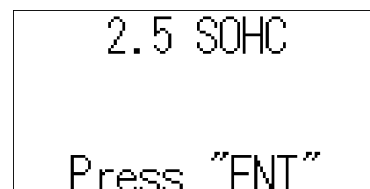
Use the [UP] and [DOWN] keys to select {Engine}, and then press the [ENT] key. (For this example, "Engine" is selected.)

To return to the Menu Selection screen, press the [C] key.



SMU-00447

4. This displays a compliance verification message for the system being diagnosed. Press the [ENT] key.



SMU-00448

5. This causes the Fault Diagnosis Menu screen to appear.

Use the [UP] and [DOWN] keys to select {Clear Memory}, and then press the [ENT] key.

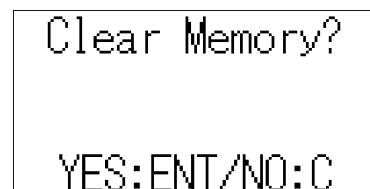
Press [C] key to return to the System Selection screen.



SMU-00464

6. This causes a memory clear confirmation message to appear, and then press the [ENT] key.

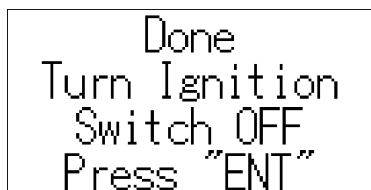
To cancel the memory clear operation, press the [C] key.



SMU-00450



7. Executing the memory clear operation causes the screen shown below to appear. In accordance with the instructions on the screen, turn off the ignition switch and then press the [ENT] key.



Done  
Turn Ignition  
Switch OFF  
Press "ENT"

SMU-00451

**NOTE:**

There are some systems that do not have a memory clear item on the fault diagnosis menu. With such a system, the diagnostic code will disappear from the display when you turn off the vehicle's ignition switch.

**Transmission System Memory Clear 2**

On the fault diagnosis screen for the transmission system, [Clear Memory] and [Clear Memory 2] items may be displayed.

Selecting the [Clear Memory 2] item deletes diagnostic codes and learning control values remembered by the transmission control module.

**Airbag System Memory Clear**

To execute the memory clear operation in the airbag system, you must first completely service all problems. If there is even one problem remaining, the memory clear operation cannot be executed.

**OBD Clearing Memory**

Clear diagnostic code memorized by "Engine" and "Transmission" control module after correcting fault.

1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select [SUBARU Vehicle], and then press the [ENT] key.



SUBARU Vehicle  
Function Setup  
Self Check  
Exit

SMU-00513

2. This causes the Menu Selection screen to appear.

Use the [UP] and [DOWN] keys to select [OBD MmoryClear], and then press the [ENT] key.

To return to the Initial Menu screen, press the [C] key or select [Exit] and then press the [ENT] key.

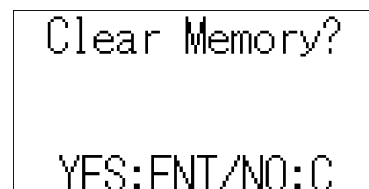


DTC check  
System Check  
IMM regist.  
OBD MmoryClear ▾

SMU-01130

3. This causes a memory clear confirmation message to appear, and then press the [ENT] key.

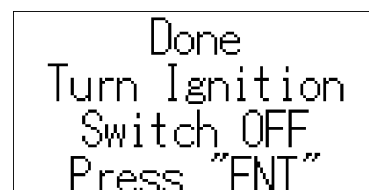
To cancel the memory clear operation, press the [C] key.



Clear Memory?  
  
YES:ENT/NO:C

SMU-00450

4. Executing the memory clear operation causes the screen shown below to appear. In accordance with the instructions on the screen, turn off the ignition switch and then press the [ENT] key.



Done  
Turn Ignition  
Switch OFF  
Press "ENT"

SMU-00451

**NOTE:**

System can be memory cleared by this function is "Engine" and "Transmission" only.

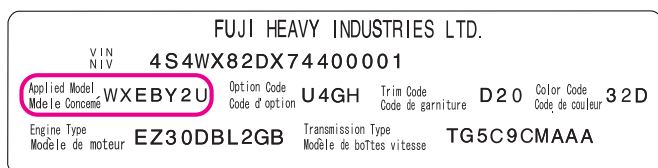


## Selection of Parameter

This function is used to select/register parameters when the VDC control module has been replaced with a normal spare part.

### NOTE:

- Always execute "Clear Memory" after operating this function.
- This function cannot be used with a control module that is not a normal spare part.
- To confirm the applied model, refer to the "model No. plate" affixed to the vehicle. The location of the model No. plate is shown in the Service Manual.



SMU-00868

## Registration Procedure

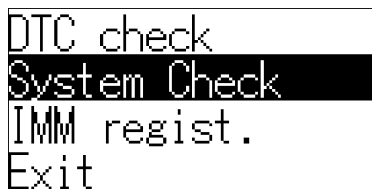
1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select [SUBARU Vehicle], and then press the [ENT] key.



SMU-00513

2. This causes the Menu Selection screen to appear.

Use the [UP] and [DOWN] keys to select [System Check], and then press the [ENT] key. To return to the Initial Menu screen, press the [C] key or select [Exit] and then press the [ENT] key.

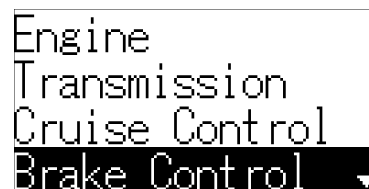


SMU-00735

3. This causes the System Selection screen to appear.

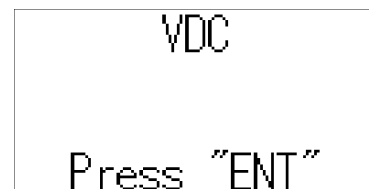
Use the [UP] and [DOWN] keys to select [Brake Control], and then press the [ENT] key.

To return to the Menu Selection screen, press the [C] key.



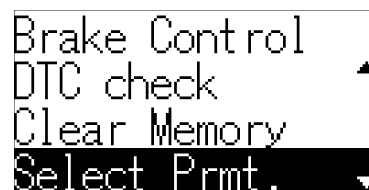
SMU-01137

4. This displays a compliance verification message for the system being diagnosed. Press the [ENT] key.



SMU-01138

5. This causes the Fault Diagnosis Menu screen to appear. Use the [UP] and [DOWN] keys to select [Select Prmt.], and then press the [ENT] key. Press [C] key to return to the System Selection screen.



SMU-01139

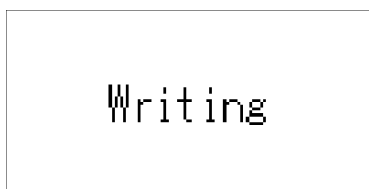
6. Input the applied model and press the [ENT] key.



SMU-01140

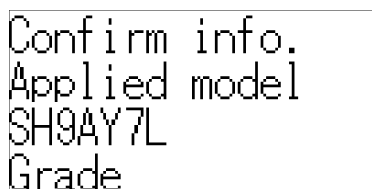


7. Stand by as the message below will appear on the screen.



SMU-01141

8. Vehicle information check screen will be displayed. Make sure that applied model and grade shown on the screen are correct. Press [C] key to return to the System Selection screen.



SMU-01142

## Confirm on Parameter

This function allows you to confirm the parameters registered in the VDC control module.

### NOTE:

This function can be used even if the VDC control module is not a normal spare part.

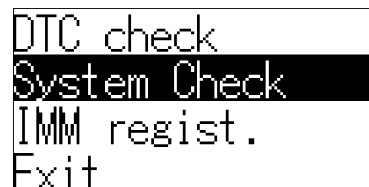
1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select [SUBARU Vehicle], and then press the [ENT] key.



SMU-00513

2. This causes the Menu Selection screen to appear.

Use the [UP] and [DOWN] keys to select [System Check], and then press the [ENT] key. To return to the Initial Menu screen, press the [C] key or select [Exit] and then press the [ENT] key.

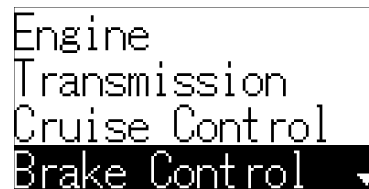


SMU-00735

3. This causes the System Selection screen to appear.

Use the [UP] and [DOWN] keys to select [Brake Control], and then press the [ENT] key.

To return to the Menu Selection screen, press the [C] key.



SMU-01137

4. This displays a compliance verification message for the system being diagnosed. Press the [ENT] key.



SMU-01138



5. This causes the Fault Diagnosis Menu screen to appear.

Use the [UP] and [DOWN] keys to select [Confirm Prmt.], and then press the [ENT] key.

To return to the Menu Selection screen, press the [C] key.

```
Brake Control
Clear Memory
Select Prmt.
Confirm Prmt.
```

SMU-01143

6. Vehicle information check screen will be displayed. Make sure that applied model and grade shown on the screen are correct.

Press [C] key to return to the System Selection screen.

```
Confirm info.
Applied model
SH9AY4L
SH9AY5L
```

SMU-01144

## Body Integrated Module Destination Market Registry (Excluding Japan)

When the body integrated module has been replaced by a normal spare part, the vehicle destination information is set to the body integrated module.

### NOTE:

- Body integrated module destination registry is a function for markets other than Japan.
- This function cannot be used with a control module that is not a normal spare part.
- Upon replacement of body integrated module, vehicle destination input is necessary. Please confirm market destination of the vehicle which the module replacement is to be performed, before the module is replaced by a spare part.

## Confirmation of Vehicle Destination (Part 1)

Confirm the vehicle destination registered in the body integrated module prior to replacement.

1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select [SUBARU Vehicle], and then press the [ENT] key.

```
SUBARU Vehicle
Function Setup
Self Check
Exit
```

SMU-00513

2. This causes the Menu Selection screen to appear.

Use the [UP] and [DOWN] keys to select [System Check], and then press the [ENT] key.

To return to the Initial Menu screen, press the [C] key or select [Exit] and then press the [ENT] key.

```
DTC check
System Check
IMM regist.
Exit
```

SMU-00735

3. This causes the System Selection screen to appear.

Use the [UP] and [DOWN] keys to select [Integ. unit], and then press the [ENT] key.

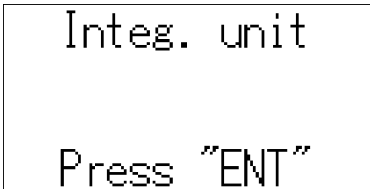
To return to the Menu Selection screen, press the [C] key

```
Brake Control
Preview Control
ImageProcessing
Integ. unit
```

SMU-00740

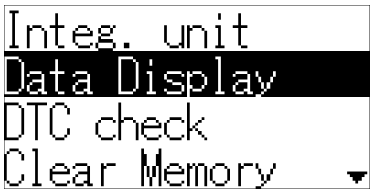


4. This displays a compliance verification message for the system being diagnosed. Press the [ENT] key.



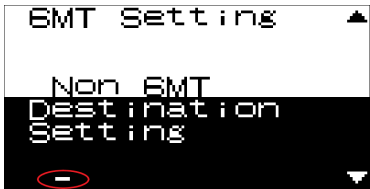
SMU-00741

5. This causes the Fault Diagnosis Menu screen to appear.  
Use the [UP] and [DOWN] keys to select [Data Display], and then press the [ENT] key.  
Press [C] key to return to the System Selection screen.



SMU-01131

6. This displays the current data. Scroll down and confirm the item [Destination Setting]. The value shown defines the market the vehicle is destined for.



SMU-01132

### For right-hand drive models

Confirm vehicle destination by "Applied Model" number row of the model number label, in which 5th out of 7 digits (count from left) distinguish the market vehicle is intended for.

Applied Model Number	5th Digit	Destination
* * * * K * *	K	EK, ER
* * * * 4 * *	4 or 5	JP
* * * * 5 * *		



SMU-01110

### Confirmation of Vehicle Destination (Part 2)

If market destination is impossible to obtain digitally (e.g. when the body integrated module is out of order), refer to [Model Number Label] fixed onto the vehicle itself.  
The location of the model number label is shown in the Service Manual.



## For left-hand drive models

Destination market is distinguished by whether the model number label is in Arabic or not.

Model Number Label	Destination
Arabic	KS



SMU-01106

Model Number Label	Destination
Non-Arabic	EC, EL, EA, EH, E2, EP, K4, K5



SMU-01105

## Registration Steps for Registering Vehicle Destination

1. After the vehicle destination is confirmed, replace the body integrated module with a fresh spare.

### NOTE:

Please refer to [Service Manual](#) for instruction of body integrated module replacement.

2. Begin destination registry for the spare body integrated module.  
First, follow steps shown in column 1 through 4 of [Confirmation of vehicle destination (Part 1)] shown above.
3. This causes the Fault Diagnosis Menu screen to appear.  
Use the [UP] and [DOWN] keys to select [Cus-

tomizing], and then press the [ENT] key.  
Press [C] key to return to the System Selection screen.

```

Integ. unit
Data Display
Clear Memory
Customizing
  
```

SMU-00742

4. Screen below will appear. Press the [ENT] key.

```

Select
Parameter

YES:ENT/NO:C
  
```

SMU-01133

5. Option code registry screen will then be displayed. Refer to [Option Code Correlation Table] shown below, enter the option code matching the destination correlating to the result of steps shown above, and then press the [ENT] key.

```

0000

Click ENT
after entering
an opt. code.
  
```

SMU-01134

## Option Code Correlation Table

Destination	Option Code
JPN	JP00
EK, ER	EK00
EC, EI, EA, EH, E2, EP, K4, K5	EC00
KS	KS00



6. Screen will then display message shown below. Reconfirm the displayed option code with the one identified by steps previously mentioned, then press the [ENT] key to conclude the registry operation.

```

Option code
  OK?

EC00
YES:ENT/NO:C

```

SMU-01135

**NOTE:**

- In case of option code shown on screen is different from vehicle destination, execute the registration procedure again after press the [C] key.
- If customize setting executed with [Market] mode already, below screen will be displayed. Click [OK] button if vehicle destination correct. Press the [ENT] key if vehicle destination correct. Press [C] key if vehicle destination not correct and register vehicle destination again after changing customize setting to [Factory] mode.(For example: destination shown with "Other than KS")

```

Confirm
the vehicle
destination
Destination:
Other than KS
YES:ENT/NO:C

```

SMU-01129

## Body Integrated Module Function Setting (Control Module Customizing)

The following procedure can be used to configure operational details, operation time, and other settings for the actuators controlled by the body integrated module.

**IMPORTANT:**

Make sure you perform setting operations in accordance with the Service Manual when using the unit customization function. Configuring the wrong settings can cause abnormal system operation and other problems.

1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select {SUBARU Vehicle}, and then press the [ENT] key.

```

SUBARU Vehicle
Function Setup
Self Check
Exit

```

SMU-00513

2. This causes the Menu Selection screen to appear.

Use the [UP] and [DOWN] keys to select {System Check}, and then press the [ENT] key.

To return to the Initial Menu screen, press the [C] key or select {Exit} and then press the [ENT] key.

```

DTC check
System Check
IMM regist.
Exit

```

SMU-00735

3. This causes the System Selection screen to appear.

Use the [UP] and [DOWN] keys to select {Integ. unit}, and then press the [ENT] key.

To return to the Menu Selection screen, press the [C] key.

```

Brake Control ▲
Preview Control
ImageProcessing
Integ. unit ▼

```

SMU-00740

**NOTE:**

- To perform Automatic Light and Wiper Unit Customizing, select [Light & Wiper] at above screen and begin procedure. (Excluding North America)
- After removing or replacing rain/light sensor, initializing the sensor is necessary by selecting [Automatic Light and Wiper] on the above screen.



4. This displays a compliance verification message for the system being diagnosed. Press the [ENT] key.

```

Integ. unit

Press "ENT"

```

SMU-00741

5. This causes the Fault Diagnosis Menu screen to appear.

Use the [UP] and [DOWN] keys to select {Customizing}, and then press the [ENT] key.

Press [C] key to return to the System Selection screen.

```

Integ. unit
Data Display
Clear Memory
Customizing

```

SMU-00742

6. On the screen that appears, use the [UP] and [DOWN] keys to select the setting(s) to be configured, and then press the [ENT] key.

Press [C] key to return to the Fault Diagnosis Menu screen.

```

Off delay time
Auto lock time
RR defogger
Wiper deicer

```

SMU-00743

#### NOTE:

Please follow the instructions on the destination confirmation screen if it is appeared. (Expt. North America, the United Kingdom, Australia and some other countries.)

7. This displays a customized setting screen for the selected item(s). Use the [RIGHT] and [LEFT] keys to select the desired setting(s), and then press the [ENT] key.

```

Off delay time
Normal
Is a setting
change made?
YES:ENT/NO:C

```

SMU-00744

8. This causes a message to appear indicating that setting configuration is complete. Press the [ENT] key.

```

Setting change
end

Press "ENT"

```

SMU-00745

## Impact Sensor

Impact Sensor sensitivity adjustment on the security system can be done by this function.

It is necessary to refer to service manuals when you do this adjustment.

1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select {SUBARU Vehicle}, and then press the [ENT] key.

```

SUBARU Vehicle
Function Setup
Self Check
Exit

```

SMU-00513

2. This causes the Menu Selection screen to appear.

Use the [UP] and [DOWN] keys to select {System Check}, and then press the [ENT] key.

To return to the Initial Menu screen, press the [C] key or select {Exit} and then press the [ENT] key.

```

DTC check
System Check
IMM regist.
Exit

```

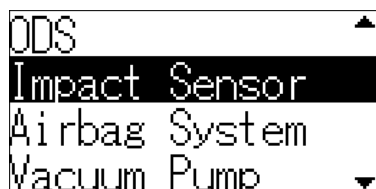
SMU-00735



3. This causes the System Selection screen to appear.

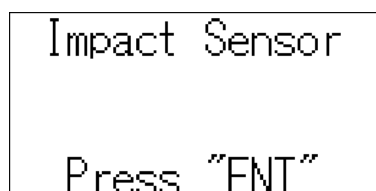
Use the [UP] and [DOWN] keys to select {Impact Sensor}, and then press the [ENT] key.

To return to the Menu Selection screen, press the [C] key.



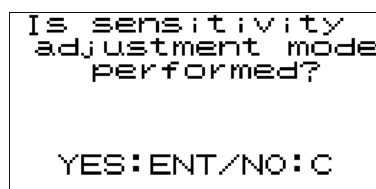
SMU-01033

4. This displays a compliance verification message for the system being diagnosed. Press the [ENT] key.



SMU-01034

5. This displays the Sensitivity Adjustment Mode execution confirmation screen. Press the [ENT] key. To cancel the Sensitivity Adjustment Mode execution, press the [C] key.



SMU-01035

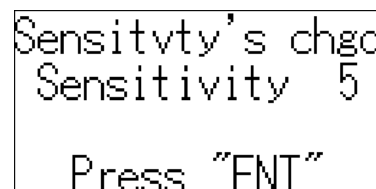
6. This displays a Sensitivity Adjustment screen. Use the [UP] key for increasing sensitivity and the [DOWN] key for decreasing sensitivity. Press the [ENT] key after completing the adjustment.

To stop the adjustment, press the [MENU] key.



SMU-01036

7. Sensitivity Adjustment confirmation screen appears. In response to this confirmation screen, press the [ENT] key.



SMU-01037

## Registering the Tire Pressure Monitoring System Transmitter (ID)

The procedure below can be used to register the tire pressure monitoring system transmitter (ID). Registration of the transmitter (ID) is required after performing any one of the following repair work procedures.

- Transmitter replacement
- Tire rotation (causing change of transmitter position)
- Tire pressure monitoring control module replacement

### NOTE:

Be sure to perform transmitter (ID) registration work in accordance with the Service Manual.

## Getting Ready

Adjust the air pressure of all of the tires so they are at the standard value.

1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select [SUBARU Vehicle], and then press the [ENT] key.



SMU-00513



2. This causes the Menu Selection screen to appear.

Use the [UP] and [DOWN] keys to select [System Check], and then press the [ENT] key.

To return to the Initial Menu screen, press the [C] key or select [Exit] and then press the [ENT] key.



```

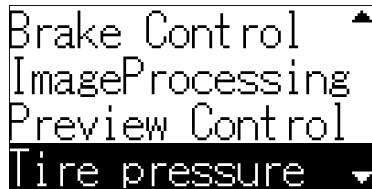
DTC check
System Check
IMM regist.
Exit
  
```

SMU-00735

3. This causes the System Selection screen to appear.

Use the [UP] and [DOWN] keys to select [Tire pressure], and then press the [ENT] key.

To return to the Menu Selection screen, press the [C] key.

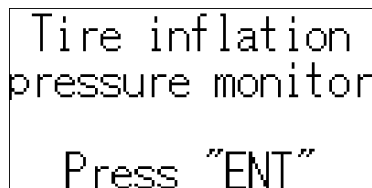


```

Brake Control
ImageProcessing
Preview Control
Tire pressure
  
```

SMU-01111

4. This displays a compliance verification message for the system being diagnosed. Press the [ENT] key.



```

Tire inflation
pressure monitor

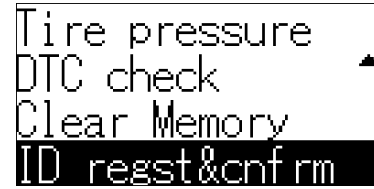
Press "ENT"
  
```

SMU-01112

5. This causes the Fault Diagnosis Menu screen to appear.

Use the [UP] and [DOWN] keys to select [ID regist&cnfrm], and then press the [ENT] key.

Press [C] key to return to the System Selection screen.



```

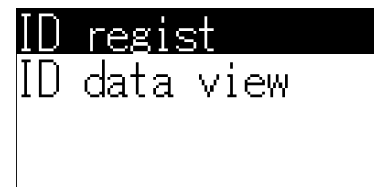
Tire pressure
DTC check
Clear Memory
ID regist&cnfrm
  
```

SMU-01113

## ID registration

1. On the screen shown, use the [UP] or [DOWN] keys to select [ID regist], and press the [ENT] key.

Press [C] key to return to the Fault Diagnosis Menu screen.



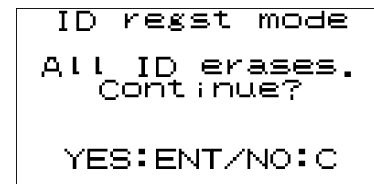
```

ID regist
ID data view
  
```

SMU-01114

2. The confirmation screen asking if you want to delete the registered transmitter ID will appear. Then press the [ENT] key.

If you do not wish to delete the ID, press the [C] key.



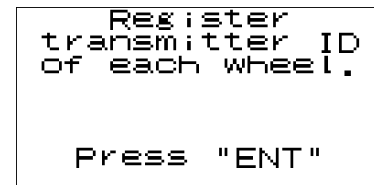
```

ID regist mode
All ID erases.
Continue?

YES:ENT/NO:C
  
```

SMU-01115

3. Once ID deletion is carried out, following screen will appear. Press the [ENT] key.



```

Register
transmitter ID
of each wheel.

Press "ENT"
  
```

SMU-01116



4. Wheel ID registration process is shown on the screen.

Use the [UP] and [DOWN] keys to scroll screen contents.

The message "complete" appears when each wheel ID registration is complete.

```
FL
complete
FR
complete
```

SMU-01117

5. The screen shown below will appear if registration ends normally. Press the [ENT] key.

```
Registry OK

Press "ENT"
```

SMU-01118

#### NOTE:

Registering a transmitter ID causes the previously registered ID to be deleted.

### Transmitter ID Data Monitor

On the selection screen shown below, use the [UP] or [DOWN] keys to select [ID data view]. This enables you to confirm the registered ID data, and the ID data sent from the transmitter to Tire pressure monitoring control module.

```
ID regist
ID data view
```

SMU-01119

### Transmitter ID Data Screen

Use the [UP] and [DOWN] keys to scroll screen contents.

To exit the transmitter ID display, press the [C] key.

```
FL ID accepted
123456
FR ID accepted
123456
```

SMU-01120

## Registering the Immobilizer (Not Equipped with Keyless Access with Push Button Start System)

#### WARNING:

- The security ID and registration command must be handled as confidential information and shall not be announced to outsiders.
- When wireless radios or car telephones are installed, they must be installed so that the immobilizer system is not influenced by electric waves.
- Do not operate cell phones or wireless radios or the like when either trouble diagnosis or immobilizer registration is in progress.
- During immobilizer registration, do not bring a key with a different ID close to the ignition switch. When the key is on a keychain, remove it from the chain before start of diagnosis. When there are several keys on one keychain, remove them from the keychain and use them individually for the work.
- When the engine cannot be started with a registered key, pull the ignition key from the ignition switch, wait approximately one second until the immobilizer warning lamp starts flashing, and then turn the ignition key slowly to start the engine.

1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select {SUBARU Vehicle}, and then press the [ENT] key.

```
SUBARU Vehicle
Function Setup
Self Check
Exit
```

SMU-00513



2. This causes the Menu Selection screen to appear.

Use the [UP] and [DOWN] keys to select {IMM regist.}, and then press the [ENT] key.

To return to the Initial Menu screen, press the [C] key or select {Exit} and then press the [ENT] key.

```
DTC check
System Check
IMM regist.
Exit
```

SMU-00746

3. Press the [ENT] key if the system selection screen is displayed.

```
Select Reg Sys
Immobi Sys:ENT
Audio Sys:TRG
Back:C
```

SMU-00949

#### NOTE:

Audio System is the specification only for the U.K.

4. On the next screen, confirm the system is keyless access with push button start system. Press the [C] key.

```
Smart system:ENT
Otherwise:C
```

SMU-00947

#### NOTE:

- The term [smart system] that appears on this screen is synonymous with the term [keyless access with push button start system] used in this text.
- The keyless access with push button start system is not equipped with some vehicles, depending on the specifications, for North America, Australia, and some other areas.

5. Press [ENT] after confirming if the ignition switch is ON, as following screen will be displayed.

```
Confirm IGN ON

YES:ENT/NO:C
```

SMU-00948

6. In response to the compliance verification screen that appears, press the [ENT] key.

```
IMMOBILIZER
2.0 TURBO

Press "ENT"
```

SMU-00880

7. Input the teaching operation code, and then press the [ENT] key.

Press [C] key to return to the Menu Selection screen.

#### NOTE:

The [UP] and [DOWN] keys allow to input numbers. The [RIGHT] and [LEFT] keys allow to move over digits of number.

```
0000

Enter
teach op code
YES:ENT/NO:C
```

SMU-00748

8. In response to the registration mode confirmation screen that appears, press the [ENT] key.

Press [C] key to return to the command input screen.

```
Execute key reg?

YES:ENT/NO:C
```

SMU-00749



9. Input the security ID and then press the [ENT] key.

**NOTE:**

The [UP] and [DOWN] keys allow to input numbers.  
The [RIGHT] and [LEFT] keys allow to move over digits of number.



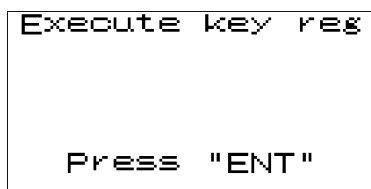
SMU-00750

10. Stand by as the security ID is being collated.



SMU-00751

11. In response to the key registration confirmation screen that appears, press the [ENT] key.



SMU-00752

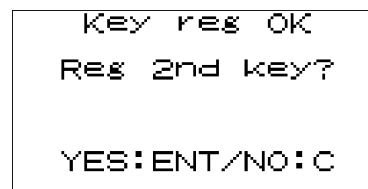
12. Stand by as the key is registered.



SMU-00753

13. The screen shown below will appear if registration ends normally.

If you have another key to be registered, press the [ENT] key. If you do not have any more keys to be registered, press the [C] key and advance to step 22.

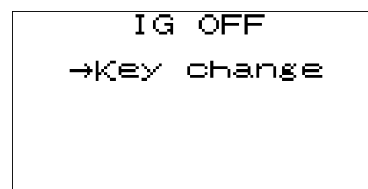


SMU-00754

14. Turn off the ignition switch, and then change the key to one to be registered.

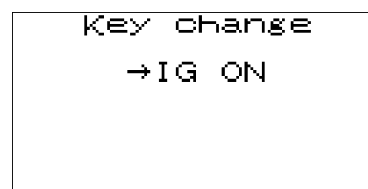
**NOTE:**

You need to change key within about 30 seconds.



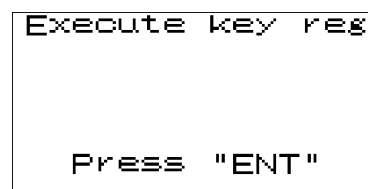
SMU-00755

15. Turn off the ignition switch and the screen shown below will appear. Insert the key you want to register into the key cylinder, and turn on the ignition switch.



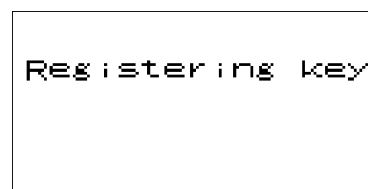
SMU-00756

16. In response to the key registration confirmation screen that appears, press the [ENT] key.



SMU-00752

17. Stand by as the key is registered.



SMU-00753



18. The screen shown below will appear if registration ends normally.

If you have another key to be registered, press the [ENT] key. If you do not have any more keys to be registered, press the [C] key and advance to step 22.

```

Key reg OK
Reg 3rd key?

YES:ENT/NO:C

```

SMU-00757

19. Repeat steps 14 through 17.

20. The screen shown below will appear if registration ends normally.

If you have another key to be registered, press the [ENT] key. If you do not have any more keys to be registered, press the [C] key and advance to step 22.

```

Key reg OK
Reg 4th key?

YES:ENT/NO:C

```

SMU-00758

21. Repeat steps 14 through 17.

22. The screen shown below will appear if registration ends normally.

Press the [ENT] key.

```

Key reg end

Press "ENT"

```

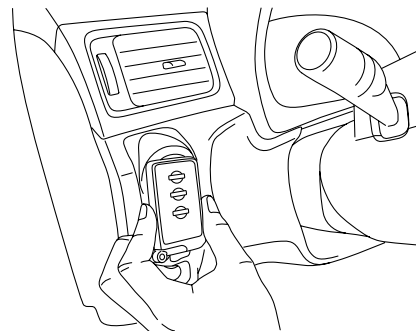
SMU-00759

23. After confirming that the immobilizer system is operating normally, quit the registration operation.

## Registering the Immobilizer (Equipped with the Keyless Access with Push Button Start System)

### WARNING:

- The security ID and registration command must be handled as confidential information and shall not be announced to outsiders.
- When you install wireless radios or car phones, make sure that Access Key are not influenced by their electric waves.
- Do not operate cell phones or wireless radios or the like when either trouble diagnosis or Access Key registration is in progress.
- The work of "Registering the Smart Immobilizer", "Registering the Smart control module" and "Delete the Access Key ID" includes the operation of holding up the Access Key to the push engine switch (push-button ignition switch). Pay attention to the following when performing this operation.
  - 1) Confirm that the battery voltage is 11 V or more and execute each mode.
  - 2) When holding up the Access Key to the push engine switch (push-button ignition switch), do not hold two or more Access Key at the same time, but use only one each time. (When the Access Key is on a keychain, remove it from the keychain before the work.)
  - 3) When holding the Access Key up to the push engine switch (push-button ignition switch), bring the Access Key close to the push engine switch (push-button ignition switch) as shown below.

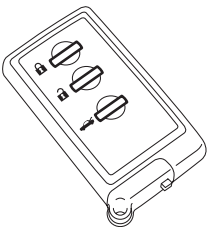
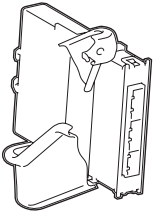
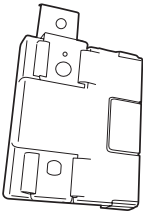


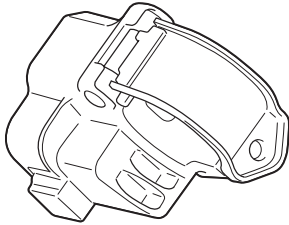
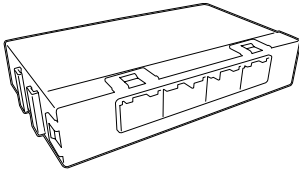
SMU-01094



- (1) Let the mechanical key insertion opening of the Access Key face down.
- (2) Hold the Subaru ornament side to the push engine switch (push-button ignition switch) side.
- (3) Bring it close until it touches the push engine switch (push-button ignition switch).

When replacing the parts for vehicles with key-less access with push button start system, always use new parts for "Access Key", "collation control module", "ID code box", "steering lock control module", and "body integrated module", and never replace by used parts. When a second-hand part is used to repair, inside of each part used in the system may be damaged.

The part which cannot change for a used part (The following illustration is an example. The shape of each part is different by a vehicle model)	
• Access Key	 SMU-01248
• Collation control module	 SMU-01249
• ID Code Box	 SMU-01250

The part which cannot change for a used part (The following illustration is an example. The shape of each part is different by a vehicle model)	
• Steering Lock control module	 SMU-01251
• Body integrated module	 SMU-01252

- If the engine cannot get started with a registered Access Key, wait approximately one second until the immobilizer warning lamp starts flashing. Then try to start the engine again with the registered Access Key.
- Do not place a PC within 10cm around Access Key and receiver antennas to avoid any malfunctions of the keyless access with push button start system.

#### NOTE:

- The keyless access with push button start system is not equipped with some vehicles, depending on the specifications, for North America, Australia, and some other areas.
- Carry out the "Registering the Smart Immobilizer" procedure in case you replace a Access Key, collation control module, body integrated module or a combination meter.
- In case of replacing a steering lock control module, execute the "Registering the Smart control module" procedure.
- When replacing the ID code box, "Registering the Engine control module" and "Registering the Smart control module" must be performed in this order.



- In case of replacing an engine control module, execute the "Registering the Engine control module" procedure.
- Immobilizer registration is NOT necessary when a power supply control module or a gateway control module is replaced.
- When turning the ignition on, press the push engine switch (push-button ignition switch) twice without stepping on the brake pedal. Power supply status changes to ACC-ON, IG-ON, OFF, ACC-ON accordingly, as pressing the push engine switch (push-button ignition switch) once.
- At the time of engine start, press the push engine switch (push-button ignition switch) once with the brake pedal depressed in case of an AT vehicle. In case of an MT vehicle, press the push engine switch (push-button ignition switch) once with the clutch pedal depressed.
- When performing either one of the operations shown below, perform also the "registration of the remote control engine starter".
  - 1) Installing remote control engine starter
  - 2) Replacing remote control engine starter
  - 3) Replacing collation control module of a vehicle equipped with remote control engine starter
- At the time of replacement of the body integrated module and the combination meter, perform "Registering the Smart Immobilizer".
- When a Access Key has been lost, perform "Delete the Access Key ID".  
When all Access Key have been lost, refer to "Keyless access with push button start system: Correspondence table at the time of parts failure".
- There is a possibility that registry fails due to poor connector coupling of cabin antenna. In such case, please repair electrical contacts of keyless access indoor antenna (front) before performing immobilizer registry. Keyless access indoor antenna (front) is the only antenna used in immobilizer registry.

## Registering the Smart Immobilizer

You can get the immobilizer registered for vehicles equipped with keyless access with push button start system.

1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select {SUBARU Vehicle}, and then press the [ENT] key.

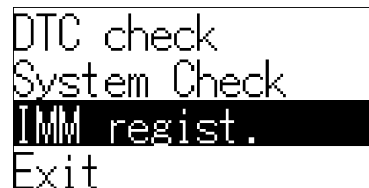


```

SUBARU Vehicle
Function Setup
Self Check
Exit
  
```

SMU-00513

2. This causes the Menu Selection screen to appear.  
Use the [UP] and [DOWN] keys to select {IMM regist.}, and then press the [ENT] key. To return to the Initial Menu screen, press the [C] key or select {Exit} and then press the [ENT] key.



```

DTC check
System Check
IMM regist.
Exit
  
```

SMU-00746

3. Press the [ENT] key if the system selection screen is displayed.



```

Select Reg Sys
Immobi Sys:ENT
Audio Sys:TRG
Back:C
  
```

SMU-00949

### NOTE:

Audio System is the specification only for the U.K.



4. On the next screen, confirm the system is keyless access with push button start system. Press the [ENT] key.

```
Smart system:ENT
Otherwise:C
```

SMU-00947

**NOTE:**

The term [Smart system] that appears on this screen is synonymous with the term [keyless access with push button start system] used in this text.

5. Input the teaching operation code, and then press the [ENT] key. Press [C] key to return to the Menu Selection screen.

**NOTE:**

The [UP] and [DOWN] keys allow to input numbers. The [RIGHT] and [LEFT] keys allow to move over digits of number.

```
0000
Enter
teach op code
YES:ENT/NO:C
```

SMU-00950

6. The registration mode selection screen appears. Use the [UP] and [DOWN] keys to select {Smrt Immobi Reg}, and then press the [ENT] key.

```
Smrt Immobi Reg
Smrt ECM Reg
E/G ECM Reg
R/O No. Key Reg▼
```

SMU-00951

7. In response to the registration mode confirmation screen that appears, press the [ENT] key.

```
SSP IMM regist.
Execute?
YES:ENT/NO:C
```

SMU-00952

8. Input the security ID and then press the [ENT] key.

```
00000
Enter sec ID
→ENT
```

SMU-00953

9. Stand by as the security ID is being collated.

```
Comparing IDs
```

SMU-00954

10. Wait until the smart immobilizer is then being registered.

```
Registering...
```

SMU-00955



11. The dialog box to confirm already registered Access Key appears. Hold one of those Access Key over the push engine switch (push-button ignition switch).

After the buzzer sounds once, move the Access Key away from the push engine switch (push-button ignition switch) and go to the next step.

```
Confirmed a key
Confirm one key
Confirmed a key
Hold over STSW
```

SMU-00956

#### NOTE:

- When holding the Access Key up to the push engine switch (push-button ignition switch), bring the Access Key close to the push engine switch (push-button ignition switch) as shown below.
  - 1) Let the mechanical key insertion opening of the Access Key face down.
  - 2) Hold the Subaru ornament side to the push engine switch (push-button ignition switch) side.
  - 3) Bring it close until it touches the push engine switch (push-button ignition switch).
- The procedure to hold a Access Key over the push engine switch (push-button ignition switch) has to be done within 30 seconds after the screen above appears.

12. When screen displays Access Key registration mode shown below, hold one Access Key you wish to register additionally over the push engine switch (push-button ignition switch).

```
Key to be regist
Hold over STSW
Registered No.=1
Quit->C key
```

SMU-00957

#### NOTE:

- When the buzzer has sounded twice, the work of holding the Access Key up has been completed, but for 10 seconds after the work, the Access Key should be kept inside the vehicle (near the select lever).
- For registration of the next Access Key, the previously registered Access Key should be removed from the vehicle.
- Do not press the [C] key until you finish registering all of the Access Key.
- The procedure to hold a Access Key over the push engine switch (push-button ignition switch) has to be done within 30 seconds after the screen above appears.

13. Stand by as the Access Key is being registered.

```
Registering...
```

SMU-00955

14. Once the registration ends normally, the [Registered No.] increases by one as you can see on the screen below.

If you have another Access Key to be registered, repeat steps 12 through 13. If you do not have any more Access Key to be registered, press the [C] key and advance to step 15.

```
Key to be regist
Hold over STSW
Registered No.=2
Quit->C key
```

SMU-00958



15. Once following screen appears, turn the push engine switch (push-button ignition switch) off. Then open or close the vehicle's door, depending on its status.

```

1: Ignition SW
   is turned off

2: Press Door SW
  
```

SMU-00959

16. Then following screen appears. Turn the ignition on.

```

3: IGN ON
  
```

SMU-00960

17. Stand by as the registration to the engine control module is being completed.

```

Engine ECM
Registering...
  
```

SMU-00961

18. The screen shown below will appear if registration ends normally. Press the [ENT] key.

```

Successful

Press "ENT"
  
```

SMU-00962

19. After confirming that the keyless access with push button start system is operating normally, quit the registration operation.

#### NOTE:

Depending on the replacement part, a different screen from the screen shown in this item may be displayed. In such a case, perform the work following the on-screen instructions.

## Registering the Smart Control Module

You can get smart-related control module registered in the keyless access with push button start system.

1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select {SUBARU Vehicle}, and then press the [ENT] key.

```

SUBARU Vehicle
Function Setup
Self Check
Exit
  
```

SMU-00513

2. This causes the Menu Selection screen to appear.

Use the [UP] and [DOWN] keys to select {IMM regist.}, and then press the [ENT] key. To return to the Initial Menu screen, press the [C] key or select {Exit} and then press the [ENT] key.

```

DTC check
System Check
IMM regist.
Exit
  
```

SMU-00746

3. Press the [ENT] key if the system selection screen is displayed.

```

Select Reg Sys
Immobl Sys:ENT
Audio Sys:TRG
Back:C
  
```

SMU-00949

#### NOTE:

Audio System is the specification only for the U.K.



4. On the next screen, confirm the system is keyless access with push button start system. Press the [ENT] key.

Smart system:ENT  
Otherwise:C

SMU-00947

**NOTE:**

The term [Smart system] that appears on this screen is synonymous with the term [keyless access with push button start system] used in this text.

5. Input the teaching operation code, and then press the [ENT] key. Press [C] key to return to the Menu Selection screen.

**NOTE:**

The [UP] and [DOWN] keys allow to input numbers. The [RIGHT] and [LEFT] keys allow to move over digits of number.

0000  
Enter  
teach op code  
YES:ENT/NO:C

SMU-00950

6. The registration mode selection screen appears. Use the [UP] and [DOWN] keys to select {Smrt ECM Reg}, and then press the [ENT] key.

Smrt Immo Reg  
Smrt ECM Reg  
E/G ECM Reg  
R/O No. Key Reg▼

SMU-00963

7. In response to the registration mode confirmation screen that appears, press the [ENT] key.

SSP ECM regist  
Execute?  
YES:ENT/NO:C

SMU-00964

8. Input the security ID and then press the [ENT] key.

00000  
Enter sec ID  
→ENT

SMU-00953

9. Stand by as the security ID is being collated.

Comparing IDs

SMU-00954

10. Wait until the smart control module is then being registered.

Registering...

SMU-00955



11. The dialog box to confirm already registered Access Key appears. Hold one of those Access Key over the push engine switch (push-button ignition switch).

After the buzzer sounds once, move the Access Key away from the push engine switch (push-button ignition switch) and go to the next step.

```
Confirmed a key
Confirm one key
Confirmed a key
Hold over STSW
```

SMU-00956

#### NOTE:

- When holding the Access Key up to the push engine switch (push-button ignition switch), bring the Access Key close to the push engine switch (push-button ignition switch) as shown below.
  - 1) Let the mechanical key insertion opening of the Access Key face down.
  - 2) Hold the Subaru ornament side to the push engine switch (push-button ignition switch) side.
  - 3) Bring it close until it touches the push engine switch (push-button ignition switch).
- The procedure to hold a Access Key over the push engine switch (push-button ignition switch) has to be done within 30 seconds after the screen above appears.

12. Smart control module registration is then automatically executed. When the registration ends normally, the following screen appears. Press the [ENT] key.

```
SSP ECM reg comp

Press "ENT"
```

SMU-00965

13. After confirming that the keyless access with push button start system is operating normally, quit the registration operation.

## Registering the Engine Control Module

You can get engine control module registered in the keyless access with push button start system.

1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select {SUBARU Vehicle}, and then press the [ENT] key.

```
SUBARU Vehicle
Function Setup
Self Check
Exit
```

SMU-00513

2. This causes the Menu Selection screen to appear. Use the [UP] and [DOWN] keys to select {IMM regist.}, and then press the [ENT] key. To return to the Initial Menu screen, press the [C] key or select {Exit} and then press the [ENT] key.

```
DTC check
System Check
IMM regist.
Exit
```

SMU-00746

3. Press the [ENT] key if the system selection screen is displayed.

```
Select Reg Sys
Immobl Sys:ENT
Audio Sys:TRG
Back:C
```

SMU-00949

#### NOTE:

Audio System is the specification only for the U.K.



4. On the next screen, confirm the system is keyless access with push button start system. Press the [ENT] key.

Smart system:ENT  
Otherwise:C

SMU-00947

**NOTE:**

The term [Smart system] that appears on this screen is synonymous with the term [keyless access with push button start system] used in this text.

5. Input the teaching operation code, and then press the [ENT] key. Press [C] key to return to the Menu Selection screen.

**NOTE:**

The [UP] and [DOWN] keys allow to input numbers. The [RIGHT] and [LEFT] keys allow to move over digits of number.

0000  
Enter  
teach op code  
YES:ENT/NO:C

SMU-00950

6. The registration mode selection screen appears. Use the [UP] and [DOWN] keys to select {E/G ECM Reg}, and then press the [ENT] key.

Smrt Immo Reg  
Smrt ECM Reg  
E/G ECM Reg  
R/O No. Key Reg▼

SMU-00966

7. In response to the registration mode confirmation screen that appears, press the [ENT] key.

Engine ECM  
Execute regist?  
YES:ENT/NO:C

SMU-00967

8. Input the security ID and then press the [ENT] key.

00000  
Enter sec ID  
→ENT

SMU-00953

9. Stand by as the security ID is being collated.

Comparing IDs

SMU-00954

10. Wait until the engine control module is then being registered.

Engine ECM  
Registering...

SMU-00968

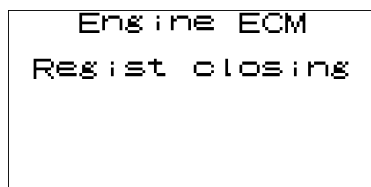
11. The screen shown below will appear if registration ends normally. Press the [ENT] key.

Successful  
Press "ENT"

SMU-00962



12. After the screen shown below appears, wait until the Initial Menu screen shows up again.



SMU-00969

13. After confirming that the keyless access with push button start system is operating normally, quit the registration operation.

## Readout the Number of Access Key Registration

The number of Access Key currently registered on the vehicle can be read.

1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select {SUBARU Vehicle}, and then press the [ENT] key.



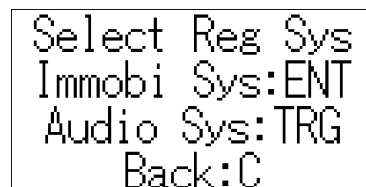
SMU-00513

2. This causes the Menu Selection screen to appear.  
Use the [UP] and [DOWN] keys to select {IMM regist.}, and then press the [ENT] key. To return to the Initial Menu screen, press the [C] key or select {Exit} and then press the [ENT] key.



SMU-00746

3. Press the [ENT] key if the system selection screen is displayed.

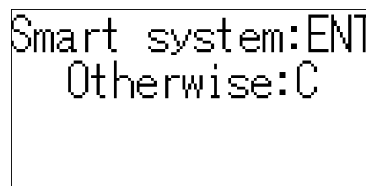


SMU-00949

### NOTE:

Audio System is the specification only for the U.K.

4. On the next screen, confirm the system is keyless access with push button start system. Press the [ENT] key.



SMU-00947

### NOTE:

The term [Smart system] that appears on this screen is synonymous with the term [keyless access with push button start system] used in this text.

5. Input the teaching operation code, and then press the [ENT] key. Press [C] key to return to the Menu Selection screen.

### NOTE:

The [UP] and [DOWN] keys allow to input numbers. The [RIGHT] and [LEFT] keys allow to move over digits of number.



SMU-00950



6. The registration mode selection screen appears.  
Use the [UP] and [DOWN] keys to select {R/O No. Key Reg}, and then press the [ENT] key.

```
Smrt Immobi Reg
Smrt ECM Reg
E/G ECM Reg
R/O No. Key Reg
```

SMU-00970

7. On the Access Key registration number display mode confirmation screen that appears, press the [ENT] key.

```
Mobile Key
Regist. Number
Execute read?

YES:ENT/NO:C
```

SMU-00971

8. The number of Access Key currently registered will be displayed. After pressing the [ENT] key, the screen will return to the Initial Menu screen.

```
# of reg keys
2num.

Press "ENT"
```

SMU-00972

## Delete the Access Key ID

Unnecessary Access Key ID registered on the keyless access with push button start system can be deleted. In this procedure, the necessary ID will not be deleted.

### NOTE:

You cannot delete all of Access Key ID by this function. The ID of a Access Key placed over the push engine switch (push-button ignition switch) will not be deleted.

1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select {SUBARU Vehicle}, and then press the [ENT] key.

```
SUBARU Vehicle
Function Setup
Self Check
Exit
```

SMU-00513

2. This causes the Menu Selection screen to appear.

Use the [UP] and [DOWN] keys to select {IMM regist.}, and then press the [ENT] key. To return to the Initial Menu screen, press the [C] key or select {Exit} and then press the [ENT] key.

```
DTC check
System Check
IMM regist.
Exit
```

SMU-00746

3. Press the [ENT] key if the system selection screen is displayed.

```
Select Reg Sys
Immobl Sys:ENT
Audio Sys:TRG
Back:C
```

SMU-00949

### NOTE:

Audio System is the specification only for the U.K.

4. On the next screen, confirm the system is keyless access with push button start system. Press the [ENT] key.

```
Smart system:ENT
Otherwise:C
```

SMU-00947

### NOTE:

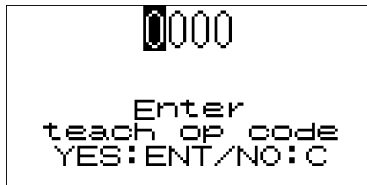
The term [Smart system] that appears on this screen is synonymous with the term [keyless access with push button start system] used in this text.



5. Input the teaching operation code, and then press the [ENT] key. Press [C] key to return to the Menu Selection screen.

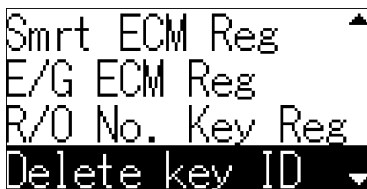
**NOTE:**

The [UP] and [DOWN] keys allow to input numbers. The [RIGHT] and [LEFT] keys allow to move over digits of number.



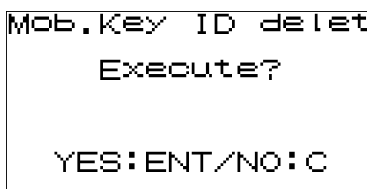
SMU-00950

6. The registration mode selection screen appears. Use the [UP] and [DOWN] keys to select {Delete key ID}, and then press the [ENT] key.



SMU-00973

7. On the Access Key ID deletion mode confirmation screen that appears, press the [ENT] key.



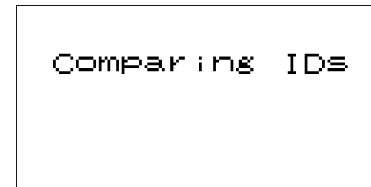
SMU-00974

8. Input the security ID and then press the [ENT] key.



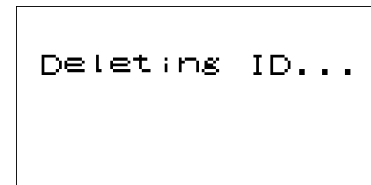
SMU-00953

9. Stand by as the security ID is being collated.



SMU-00975

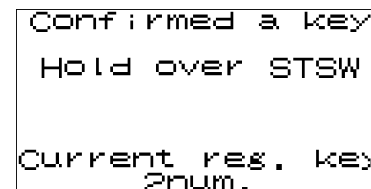
10. Wait until the Access Key ID is then being deleted.



SMU-00976

11. As the number of registered Access Key confirmation screen will be displayed, place one of the registered Access Key, the key, which you do not want to delete the ID, over the push engine switch (push-button ignition switch).

After the buzzer sounds once, move the Access Key away from the push engine switch (push-button ignition switch) and go to the next step.



SMU-00977

**NOTE:**

- The ID of a Access Key placed over the push engine switch (push-button ignition switch) will only be left.
- When holding the Access Key up to the push engine switch (push-button ignition switch), bring the Access Key close to the push engine switch (push-button ignition switch) as shown below.
  - 1) Let the mechanical key insertion opening of the Access Key face down.
  - 2) Hold the Subaru ornament side to the push engine switch (push-button ignition switch) side.
  - 3) Bring it close until it touches the push engine switch (push-button ignition switch).



- The procedure to hold a Access Key over the push engine switch (push-button ignition switch) has to be done within 30 seconds after the screen above appears.

12. The screen shown below will appear if Access Key ID deletion ends normally. Press the [ENT] key.

```
ID del. complete
  Mobile Key
  Regist. Number
  {num.
  Press "ENT"
```

SMU-00978

13. Complete this procedure after confirming if the keyless access with push button start system works properly by using a Access Key, which has the ID not deleted.

## Registering the Remote Control Engine Starter

You can get remote control engine starter registered in the keyless access with push button start system.

### NOTE:

Remote control engine starter is the specification only for the Japan.

1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select {SUBARU Vehicle}, and then press the [ENT] key.

```
SUBARU Vehicle
Function Setup
Self Check
Exit
```

SMU-00513

2. This causes the Menu Selection screen to appear.

Use the [UP] and [DOWN] keys to select {IMM regist.}, and then press the [ENT] key. To return to the Initial Menu screen, press the [C] key or select {Exit} and then press the [ENT] key.

```
DTC check
System Check
IMM regist.
Exit
```

SMU-00746

3. Press the [ENT] key if the system selection screen is displayed.

```
Select Reg Sys
Immobi Sys:ENT
Audio Sys:TRG
Back:C
```

SMU-00949

### NOTE:

Audio System is the specification only for the U.K.

4. On the next screen, confirm the system is keyless access with push button start system. Press the [ENT] key.

```
Smart system:ENT
Otherwise:C
```

SMU-00947

### NOTE:

The term [Smart system] that appears on this screen is synonymous with the term [keyless access with push button start system] used in this text.

5. Input the teaching operation code, and then press the [ENT] key. Press [C] key to return to the Menu Selection screen.

### NOTE:

The [UP] and [DOWN] keys allow to input numbers. The [RIGHT] and [LEFT] keys allow to move over digits of number.

```
0000
Enter
teach op code
YES:ENT/NO:C
```

SMU-00950



6. The registration mode selection screen appears. Use the [UP] and [DOWN] keys to select {R/C E/G ST Reg}, and then press the [ENT] key.

```

E/G ECM Reg
R/O No. Key Reg
Delete key ID
R/C E/G ST Reg
  
```

SMU-00979

7. In response to the registration mode confirmation screen that appears, press the [ENT] key.

```

Reg remote cont
eng starter?

YES:ENT/NO:C
  
```

SMU-00980

8. Input the security ID and then press the [ENT] key.

```

00000

Enter sec ID
→ENT
  
```

SMU-00953

9. Stand by as the security ID is being collated.

```

Comparing IDs
  
```

SMU-00954

10. Wait until the remote control engine starter is then being registered.

```

Registering...
  
```

SMU-00955

11. The screen shown below will appear if remote control engine starter registration ends normally. Press the [ENT] key.

```

Starter reg end

Press "ENT"
  
```

SMU-00981

12. After confirming that the keyless access with push button start system and remote control engine starter is operating normally, quit the registration operation.

## Configuring SDI Functions

1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select {Function Setup}, and then press the [ENT] key.

```

SUBARU Vehicle
Function Setup
Self Check
Exit
  
```

SMU-00514

2. This causes the Menu Selection screen to appear.

Use the [UP] and [DOWN] keys to select the desired item, and then press the [ENT] key.

To return to the Initial Menu screen, press the [C] key.

```

Date and Time
User Language
Unit Selection
LCD Contrast
  
```

SMU-00452



### 1) Setting the Date and Time

This item provides a means for configuring the date and time setting of the SDI built-in clock.

- (1) On the Menu Selection screen, use the [UP] and [DOWN] keys to select {Date and Time}, and then press the [ENT] key.



SMU-00452

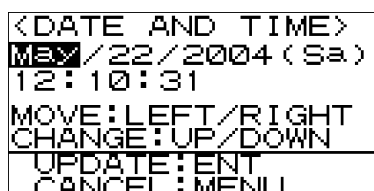
- (2) This displays the DATE AND TIME screen. The following setting items are displayed from left to right: <Month>, <Day>, <Year>, <Hour>, <Minute>, <Second>. Use the [LEFT] and [RIGHT] keys to select the desired item, and then use the [UP] and [DOWN] keys to change the selected setting.

After configuring the settings, press the [ENT] key.

To cancel the setting procedure, press the [MENU] key.

#### NOTE:

The day of the week setting is configured automatically in accordance with the date that set.



SMU-00352

### 2) Selecting a User Language

This item can be used to select the display language for SDI screens.

- (1) On the Menu Selection screen, use the [UP] and [DOWN] keys to select {User Language}, and then press the [ENT] key.



SMU-00466

- (2) This causes the Language Selection screen to appear. Use the [UP] and [DOWN] keys to select the desired language, and then press the [ENT] key.

To return to the Menu Selection screen, press the [C] key.



SMU-00453

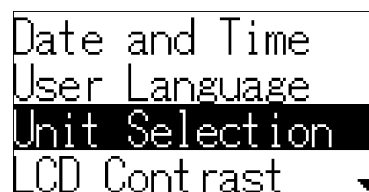
#### NOTE:

The display language is set to English regardless of the preset language when the SDI power is turned on with the [C] key of the SDI held down.

### 3) Selecting Measurement Units

This item specifies the numeric unit for values displayed on SDI screens.

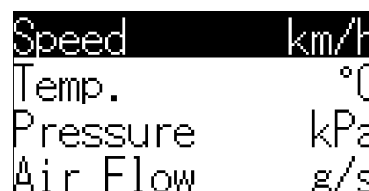
- (1) On the Menu Selection screen, use the [UP] and [DOWN] keys to select {Unit Selection}, and then press the [ENT] key.



SMU-00467

- (2) This causes the Unit Selection screen to appear. Use the [UP] and [DOWN] keys to select the desired measurement item, and then use the [LEFT] and [RIGHT] keys to change its measurement unit. Finally press the [ENT] key.

To return to the Menu Selection screen, press the [C] key.



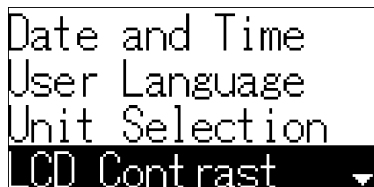
SMU-00454



#### 4) Adjusting Display Contrast

The contrast of the LCD can be adjusted to make its contents easier to view.

- (1) On the Menu Selection screen, use the [UP] and [DOWN] keys to select {LCD Contrast}, and then press the [ENT] key.



SMU-00468

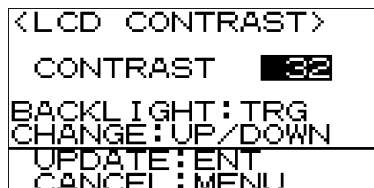
- (2) This causes the LCD CONTRAST screen to appear.

Use the [UP] and [DOWN] keys to adjust display contrast to the desired level, and then press the [ENT] key.

To cancel the setting or to return to the Menu Selection screen, press the [MENU] key.

#### NOTE:

You can check display contrast by pressing the [TRG] key on the keypad to turn off the LCD backlight. To turn the LCD backlight back on, press the [TRG] key again.

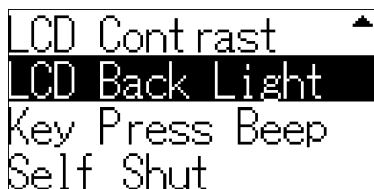


SMU-00355

#### 5) Setting the Backlight Time

The LCD backlight turns off automatically if no SDI operation is performed for a preset period. This setting specifies length of time of the preset period.

- (1) On the Menu Selection screen, use the [UP] and [DOWN] keys to select {LCD Back Light}, and then press the [ENT] key.



SMU-00469

- (2) This displays the BACKLIGHT TIME screen. Use the [UP] and [DOWN] keys to change the backlight time setting, and then press the [ENT] key.

To cancel the setting or to return to the Menu Selection screen, press the [MENU] key.



SMU-00354

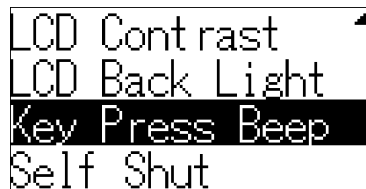
#### NOTE:

- Selecting OFF turns off the LCD backlight.
- Selecting FOREVER keeps the LCD backlight turned on.

#### 6) Turning Key Press Beep On and Off

This setting turns the SDI key operation confirmation buzzer on and off.

- (1) On the Menu Selection screen, use the [UP] and [DOWN] keys to select {Key Press Beep}, and then press the [ENT] key.

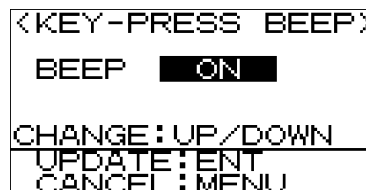


SMU-00470

- (2) This causes the KEY-PRESS BEEP screen to appear.

Use the [UP] and [DOWN] keys to select on or off for the key press beep, and then press the [ENT] key.

To cancel the setting or to return to the Menu Selection screen, press the [MENU] key.



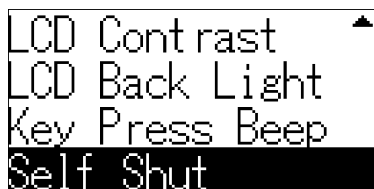
SMU-00356



## 7) Setting the Self-Shutoff Time

This item provides a means for configuring the SDI self-shutoff time setting.

- (1) On the Menu Selection screen, use the [UP] and [DOWN] keys to select {Self Shut}, and then press the [ENT] key.



SMU-00471

- (2) This displays the SELF SHUT TIME screen. Use the [UP] and [DOWN] keys to change the time setting to shut off SDI power automatically, and then press the [ENT] key.

To cancel the setting or to return to the Menu Selection screen, press the [MENU] key.



SMU-00353

### NOTE:

Selecting OFF turns off the SDI self shutdown feature.

Note that turning off SDI self shutdown runs the risk of running down the vehicle's battery.

## Performing SDI Self-diagnosis

1. On the Initial Menu screen, use the [UP] and [DOWN] keys to select {Self Check}, and then press the [ENT] key.



SMU-00515

2. This causes the Menu Selection screen to appear.

Use the [UP] and [DOWN] keys to select the desired item, and then press the [ENT] key.

To return to the Initial Menu screen, press the [C] key.



SMU-00455

### NOTE:

Take the required corrective measures immediately if you discover an abnormality when using SDI self-diagnosis.

## LCD CHECK

The items on this screen can be used to check the LCD dots, draw area, contrast, and backlight.

Use the [UP] and [DOWN] keys to select the desired item, and then press the [ENT] key.

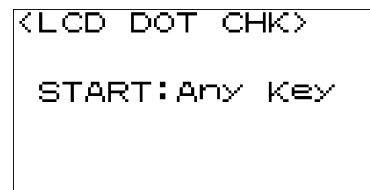
To return to the Menu Selection screen, press the [C] key.



SMU-00456

### 1.LCD DOT CHECK

This item checks LCD dots. Press any key on the key pad.

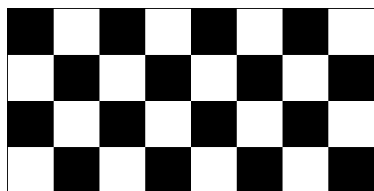


SMU-00521



This causes the black and white areas of the display to flash alternately, which makes it possible to check whether LCD dots turn on and off normally. An LCD dot is defective if a black dot remains black within a white area, or if a white dot remains white within a black area.

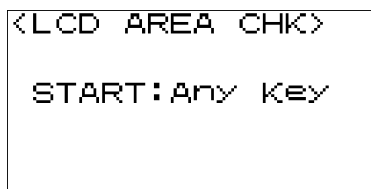
After checking LCD dots, press the [ENT] key.



SMU-00326

## 2. LCD AREA CHECK

This item checks the LCD draw area. Press any key on the key pad.



SMU-00522

Confirm that a black border appears on all four sides of the display, and then press the [ENT] key.



SMU-00328

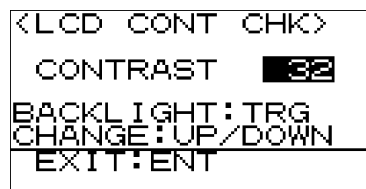
## 3. LCD CONTRAST CHECK

This item checks whether LCD display contrast can be adjusted. Pressing the [UP] key makes LCD contrast darker, while the [DOWN] key makes LCD contrast lighter.

After checking whether contrast can be adjusted, press the [ENT] key.

### NOTE:

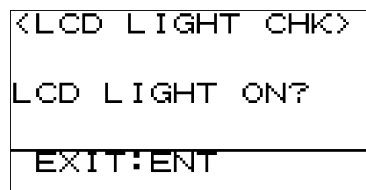
You can check display contrast without backlighting by pressing the [TRG] key on the keypad to turn off the LCD backlight. To turn the LCD backlight back on, press the [TRG] key again.



SMU-00329

## 4. LCD BACKLIGHT CHECK

After checking the LCD backlight, press the [ENT] key.



SMU-00330

## MAIN LED CHECK

The items on this screen can be used to check if the SIG LED of the SDI lights or flashes red or green in accordance with the status of the SDI. This check confirms the operational status of the SIG LED.

Use the [UP] and [DOWN] keys to select the desired item on the Menu Selection screen, and then press the [ENT] key.

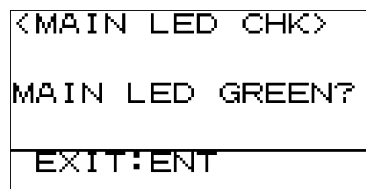
To return to the Menu Selection screen, press the [C] key.



SMU-00457

## 1. MAIN LED (Green) CHECK

After confirming that the SIG LED repeats a pattern of four green flashes followed by 10 seconds of steady green lighting, press the [ENT] key.



SMU-00332



## 2. MAIN LED (Red) CHECK

After confirming that the SIG LED repeats a pattern of four red flashes followed by 10 seconds of steady red lighting, press the [ENT] key.

```
<MAIN LED CHK>
MAIN LED RED?
EXIT:ENT
```

SMU-00333

## REMOTE LED CHECK

The items on this screen can be used to check if the LED on the driving recorder remote box lights or flashes green or red. This check confirms the operational status of the SIG LED.

Use the [UP] and [DOWN] keys to select the desired item on the Remote LED Check screen, and then press the [ENT] key.

To return to the Menu Selection screen, press the [C] key.

```
Remo-LED(GREEN)
Remo-LED(RED)
```

SMU-00458

### 1. REMOTE LED (Green) CHECK

After confirming that the LED repeats a pattern of four green flashes followed by 10 seconds of steady green lighting, press the [ENT] key.

```
<REMO LED CHK>
REMO LED GREEN?
EXIT:ENT
```

SMU-00335

### 2. REMOTE LED (Red) CHECK

After confirming that the LED repeats a pattern of four green flashes followed by 10 seconds of steady green lighting, press the [ENT] key.

```
<REMO LED CHK>
REMO LED RED?
EXIT:ENT
```

SMU-00336

## KEY IN CHECK

This item checks SDI keypad operation.

Key names appear on the display in the following sequence: UP → DOWN → RIGHT → LEFT → ENT → TRG → C → MENU.

Key operation is normal if the next key operation prompt screen appears when you press a key other than [MENU].

If the check reveals an abnormality, press the [MENU] key to exit the check procedure.

```
<KEY IN CHK>
Push UP Key
CANCEL:MENU
```

SMU-00337

## REMOTE SWITCH CHECK

1. This item checks operation of the trigger (TRG) switch, which is a driving recorder remote box.

To check operation of the trigger switch, press the [ENT] key.

```
Remo-TRG Switch
```

SMU-00459



2. Operate the trigger switch as instructed by the messages that appear on the display. If “CHECK OK!” or “CHECK NG!” appears, press the [ENT] key.

To return to the SELF CHECK screen, press the [MENU] key.

```

<REMO TRG CHK>
Keep Pushing
REMOTE TRG SW

CANCEL:MENU

```

SMU-00339

Selecting this item displays the current buzzer volume level. Press the [UP] key to increase buzzer volume, or the [DOWN] key to decrease buzzer volume.

After checking the buzzer volume, press the [ENT] key.

```

<BEEP VOL CHK>
VOLUME 68

CHANGE:UP/DOWN
EXIT:ENT

```

SMU-00342

## BEEP CHECK

This item checks the frequency and the volume of the SDI buzzer. Use the [UP] and [DOWN] keys to select the desired item on the beep check screen, and then press the [ENT] key.

To return to the Menu Selection screen, press the [C] key.

```

Beep Frequency
Beep Volume

```

SMU-00460

### 1. BEEP FREQUENCY CHECK

This item can be used to check buzzer operation and the buzzer frequency.

Selecting it displays the current buzzer frequency setting. Press the [UP] key to raise the buzzer frequency, or the [DOWN] key to lower the buzzer frequency.

After checking the buzzer frequency, press the [ENT] key.

```

<BEEP FREQ CHK>
FREQUENCY 4000

CHANGE:UP/DOWN
EXIT:ENT

```

SMU-00341

### 2. BEEP VOLUME CHECK

This item can be used to check buzzer operation and adjust its volume.

## RAM CHECK

This item executes a SDI self-check of the SDI built-in RAM, and displays the result.

When completion of the self-diagnosis is indicated by “CHECK OK!” or “CHECK NG” on the display, press the [ENT] key.

```

<RAM CHK>

CHECK OK!

EXIT:ENT

```

SMU-00343

## ROM CHECK

This item executes an SDI self-check of the SDI built-in ROM, and displays the result.

Check the display after the self-check is complete.

ROM is normal if the hexadecimal values that appear under “WrSUM” and “CalSUM” on the display are identical.

After checking ROM, press the [ENT] key.

### NOTE:

Use the [UP] and [DOWN] keys to scroll screen contents.

```

Mod  WrSUM  CalSUM
IPL  ABB7    ABB7
OS   8B12    8B12
ExF  ----    ----
STD  3C9D    3C9D
ExC  DD5C    DD5C

OK:ENT
NG:MENU  DOWN

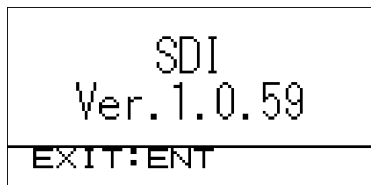
```

SMU-00344



## VERSION CHECK

This item provides a means for checking the SDI software version. Make sure the version that appears during data communication is the same as the version shown on the version check screen. After checking the version, press the [ENT] key.



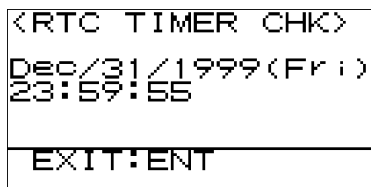
SMU-00523

## CLOCK IC CHECK

This item provides a means to check whether the date and time setting operation of the SDI built-in clock is correct.

Check to make sure that the year, month, day, day of the week, hour, minute, and second indicators at the bottom of the display change to Jan/01/2000 (Sat) 00:00:00.

After checking the clock, press the [ENT] key.

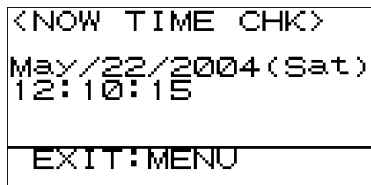


SMU-00350

## NOW TIME CHECK

This item displays the current date and time setting of the SDI built-in clock.

To return to the Menu Selection screen, press the [ENT] key.



SMU-00347



## DST-i Stand-alone Diagnosis

The DST-i can be used for fault diagnosis in a stand-alone configuration without connecting to a PC.

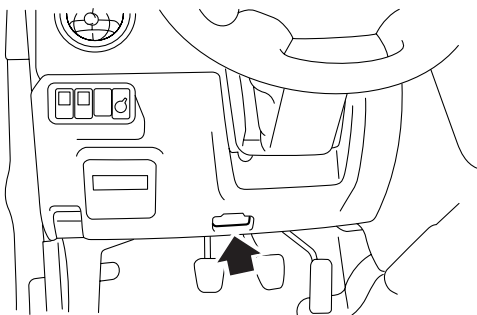
You need to insert a SD memory card with the software installed on it into the card slot of the DST-i in order to perform stand-alone diagnosis.

### NOTE:

- Be sure to turn off DST-i power before installing a SD memory card into or removing a SD memory card from its card slot. Inserting or removing a SD memory card while DST-i power is turned on runs the risk of damaging the internal data of SD memory card.
- You can carry out this function only when interface box to use is DST-i.

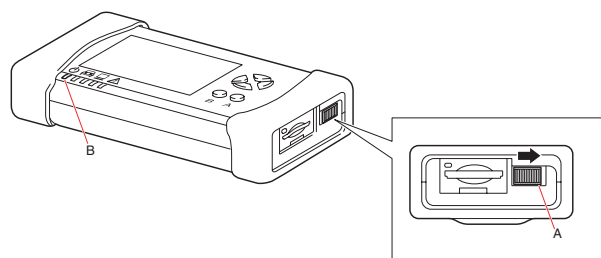
## Getting Ready (Starting Up the DST-i in Stand-alone Mode)

1. Insert a SD memory card that has the software installed into the card slot of the DST-i.
2. Use the datalink cable to connect the DST-i to the datalink connector of the vehicle.



SMU-00113

3. Turn the mode switch of DST-i on, and confirm the [Power] indicator lights up in green.



SMU-01379

- A: Mode switch  
B: Power indicator

4. After the Opening screen was displayed, press any key.



SMU-01380

### NOTE:

Depending on setting, a driving recorder mode may be started. In that case, you select "STScreen" with the left key or the right key and push the A key.

5. This displays the Main Menu screen.



SMU-01381



## All System Diagnosis

Selecting this item displays the fault detect status of all control system control modules for which SSMIII diagnosis is supported, and memorized DTCs.

When a particular control system cannot be identified as the causes of a vehicle's problem, perform this diagnosis and use the displayed DTCs to perform diagnosis.

### NOTE:

- For a vehicle equipped with a cruise control system, turn on the cruise control switch before performing inspection.
- This inspection mode may not function in the case of certain vehicle models and vehicle specifications.

1. On the Main Menu screen, use [LEFT] and [RIGHT] keys to select [Diagnostic], and then press [A] key.



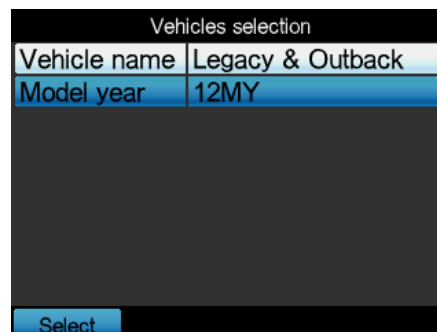
SMU-01381

2. This displays the Vehicle Select screen.  
Press [A] key after determination of vehicle.  
Press [B] key to clear the selected vehicle information. Press [B] key while a vehicle is not selected to return to the Main Menu screen.

### NOTE:

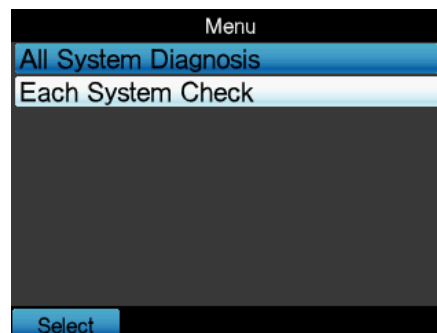
Use [LEFT] and [RIGHT] keys to select [Select] of the button display area, and pressing [A] key displays the Vehicle Name Select screen. Select a target vehicle name.

Repeat to select vehicle information such as model until a vehicle is determined after selection of a vehicle name.



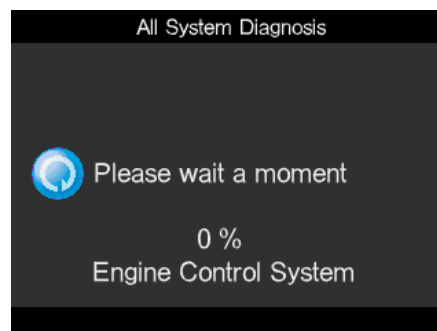
SMU-01382

3. This displays the Inspection Menu screen.  
Use [UP] and [DOWN] keys to select [All System Diagnosis], and then press [A] key.  
Press [B] key to return to the Vehicle Select screen.



SMU-01383

4. This displays the All DTC Reading screen.



SMU-01384

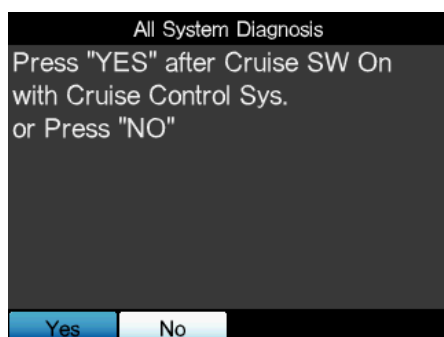


5. The screen shown below may be displayed.

For a vehicle equipped with a cruise control system, turn on the cruise control main switch and then use [LEFT] and [RIGHT] keys to select [Yes] of the button display area, and press [A] key. For a vehicle that does not have cruise control, select [No], and then press [A] key.

**NOTE:**

This screen may not be displayed in the case of certain vehicle specifications.



SMU-01385

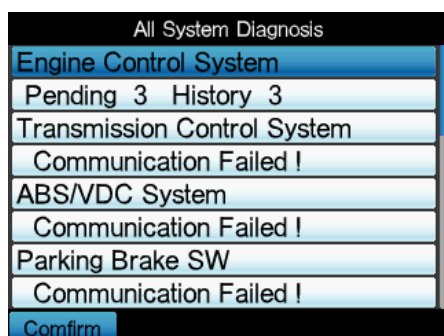
6. This displays the All DTC Display screen.

Use [UP] and [DOWN] keys to select any system, and press [A] key.

Press [B] key to return to the Inspection Menu screen.

**NOTE:**

The display shows the DTCs that are remembered by each control module.



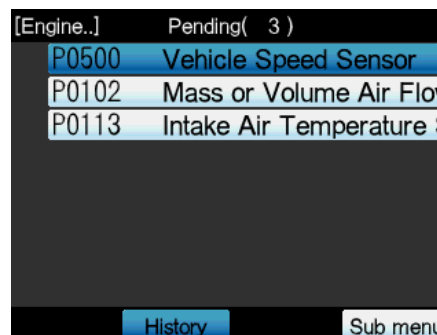
SMU-01386

7. This displays the System Distinction DTC Display screen.

Press [B] key to return to the All DTC Display screen.

**NOTE:**

- The current system name is displayed in the upper left portion of the screen.
- Use [LEFT] and [RIGHT] keys to select [Memorized] of the button display area, and press [A] key to change DTC displayed in the screen. The displayed DTC and the button name of the button display area such as [Temporary] or [Memorized] may be different in the case of vehicle and system.



SMU-01387

## Data Display

This system allows sampling of control module input/output data of control systems for which SSMIII diagnosis is supported, and sampling of control data.

1. On the Main Menu screen, use [LEFT] and [RIGHT] keys to select [Diagnostic], and then press [A] key.



SMU-01381



2. This displays the Vehicle Select screen.

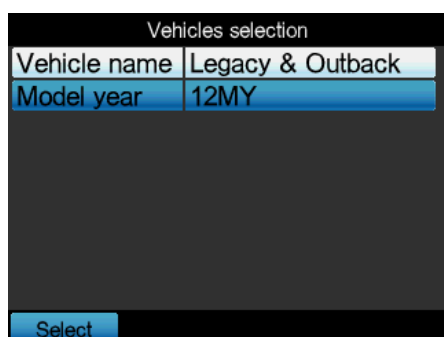
Press [A] key after determination of vehicle.

Press [B] key to clear the selected vehicle information. Press [B] key while a vehicle is not selected to return to the Main Menu screen.

**NOTE:**

Use [LEFT] and [RIGHT] keys to select [Select] of the button display area, and pressing [A] key displays the Vehicle Name Select screen. Select a target vehicle name.

Repeat to select vehicle information such as model until a vehicle is determined after selection of a vehicle name.

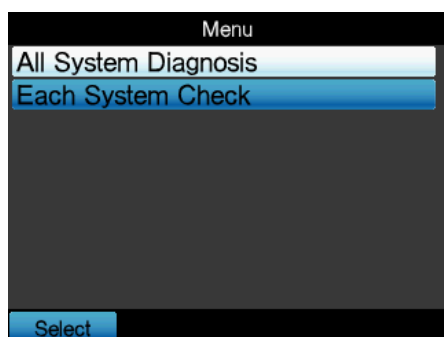


SMU-01382

3. This displays the Inspection Menu screen.

Use [UP] and [DOWN] keys to select [Each System Check], and then press [A] key.

Press [B] key to return to the Vehicle Select screen.

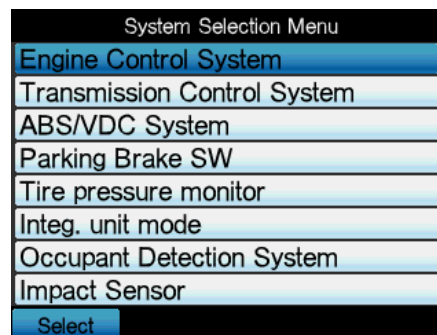


SMU-01388

4. This displays the System Select screen.

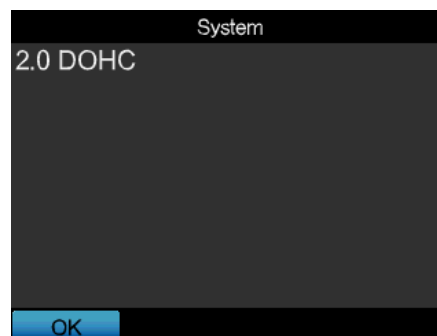
Use [UP] and [DOWN] keys to select [Engine Control System], and then press [A] key. "For this example, [Engine Control System] is selected."

Press [B] key to return to the Inspection Menu screen.



SMU-01389

5. This displays the System Information Display screen for the system being diagnosed. Press [A] key.

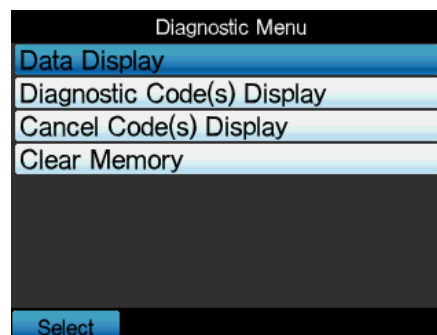


SMU-01390

6. This displays the Diagnostic Menu screen.

Use [UP] and [DOWN] keys to select [Data Display], and then press [A] key.

Press [B] key to return to the System Select screen.



SMU-01391



7. This displays the Data Display Items Select screen (Select method).

Use [UP] and [DOWN] keys to select [All Data] or [Select Data], and then press [A] key.

Press [B] key to return to the Diagnostic Menu screen.

**NOTE:**

All the sampled items are displayed in the selected status in [All Data], and the sampled items are displayed in the not-selected status in [Select Data].



SMU-01392

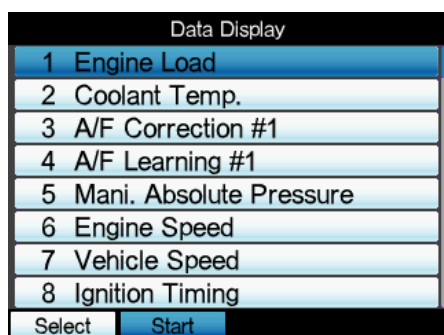
8. This displays the Data Display Items Select screen (Sampled items).

Use [LEFT] and [RIGHT] keys to select [Start] of the button display area, and press [A] key.

Press [B] key to return to the Data Display Items Select screen (Select method).

**NOTE:**

The alignment sequence in the screen is displayed in the left side of the sampled item.



SMU-01393

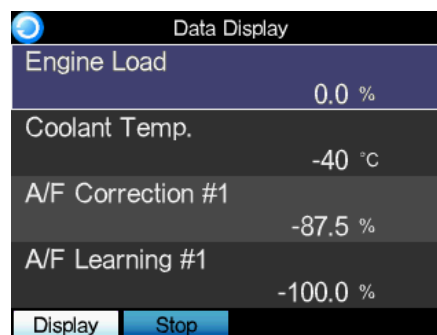
9. This displays the Current Data Display screen.

Use [LEFT] and [RIGHT] keys to select [Stop] of the button display area, and press [A] key.

Press [B] key to return to the Data Display Items Select screen (Sampled items).

**NOTE:**

Use [LEFT] and [Right] keys to select [Display] of the button display area, and press [A] key to change the number of sampled items shown in the screen to eight items.

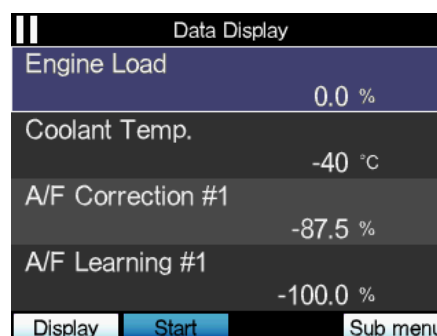


SMU-01394

10. This displays the Measurement Stop screen.

Use [LEFT] and [RIGHT] keys to select [Start] of the button display area, and press [A] key to re-start measurement.

Press [B] key to return to the Data Display Items Select screen (Sampled items).



SMU-01395



## Diagnostic Code(s) Display

This type of inspection allows selection of a system from among the control systems for which SSMIII diagnosis is supported. Then memorized information such as DTCs can be viewed on the DST-i screen.

1. On the Main Menu screen, use [LEFT] and [RIGHT] keys to select [Diagnostic], and then press [A] key.



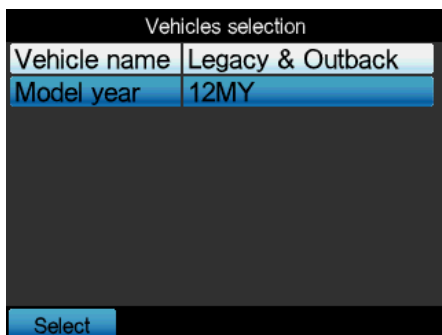
SMU-01381

2. This displays the Vehicle Select screen.  
Press [A] key after determination of vehicle.  
Press [B] key to clear the selected vehicle information. Press [B] key while a vehicle is not selected to return to the Main Menu screen.

### NOTE:

Use [LEFT] and [RIGHT] keys to select [Select] of the button display area, and pressing [A] key displays the Vehicle Name Select screen. Select a target vehicle name.

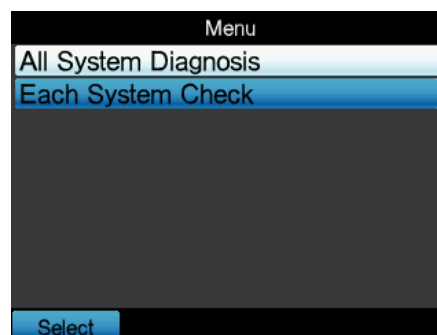
Repeat to select vehicle information such as model until a vehicle is determined after selection of a vehicle name.



SMU-01382

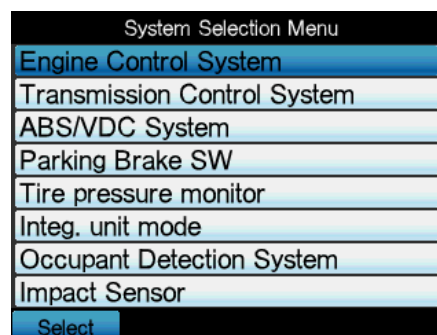
3. This displays the Inspection Menu screen.  
Use [UP] and [DOWN] keys to select [Each Sys-

tem Check], and then press [A] key.  
Press [B] key to return to the Vehicle Select screen.



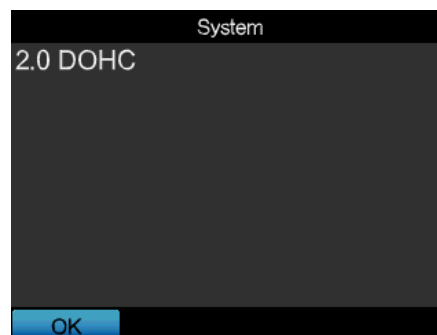
SMU-01388

4. This displays the System Select screen.  
Use [UP] and [DOWN] keys to select [Engine Control System], and then press [A] key. "For this example, [Engine Control System] is selected."  
Press [B] key to return to the Inspection Menu screen.



SMU-01389

5. This displays the System Information Display screen for the system being diagnosed. Press [A] key.

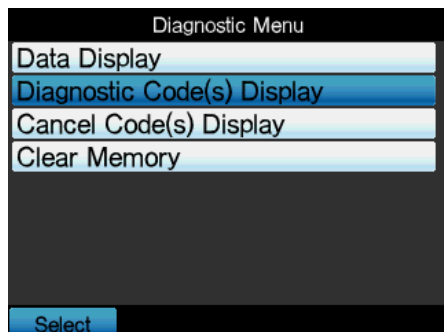


SMU-01390



6. This displays the Diagnostic Menu screen.

Use [UP] and [DOWN] keys to select [Diagnostic Code(s) Display], and then press [A] key.  
Press [B] key to return to the System Select screen.



SMU-01396

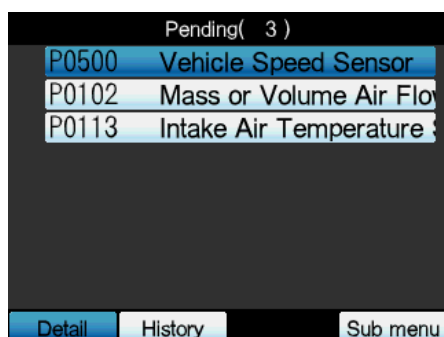
7. This displays the DTC Display screen.

Use [UP] and [DOWN] keys to select any code.  
Use [LEFT] and [RIGHT] keys to select [Details] of the button display area, and press [A] key.  
Press [B] key to return to the Diagnostic Menu screen.

#### NOTE:

Use [LEFT] and [RIGHT] keys to select [Memo-rized] of the button display area, and press [A] key to change DTC displayed in the screen.

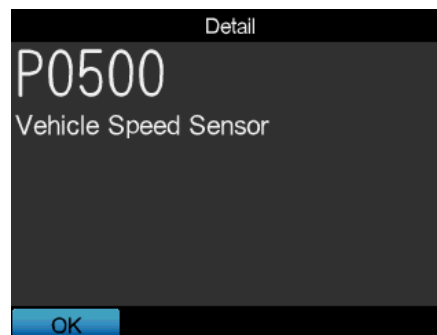
The displayed DTC and the button name of the button display area such as [Temporary] or [Memo-rized] may be different in the case of vehicle and system.



SMU-01397

8. This displays the DTC Details Display screen.

Press [A] key or [B] key to return to the DTC Display screen.



SMU-01398

## Clear Memory

Use the following procedure to delete the DTCs memorized by the control modules of each system after correcting the fault.

1. On the Main Menu screen, use [LEFT] and [RIGHT] keys to select [Diagnostic], and then press [A] key.



SMU-01381

2. This displays the Vehicle Select screen.

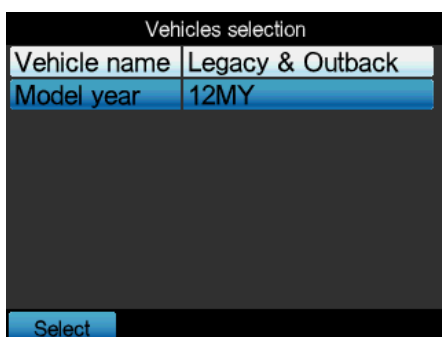
Press [A] key after determination of vehicle.  
Press [B] key to clear the selected vehicle information. Press [B] key while a vehicle is not selected to return to the Main Menu screen.



**NOTE:**

Use [LEFT] and [RIGHT] keys to select [Select] of the button display area, and pressing [A] key displays the Vehicle Name Select screen. Select a target vehicle name.

Repeat to select vehicle information such as model until a vehicle is determined after selection of a vehicle name.

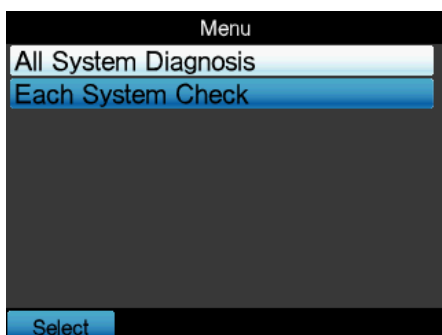


SMU-01382

3. This displays the Inspection Menu screen.

Use [UP] and [DOWN] keys to select [Each System Check], and then press [A] key.

Press [B] key to return to the Vehicle Select screen.

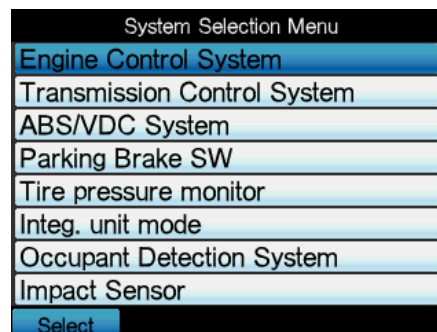


SMU-01388

4. This displays the System Select screen.

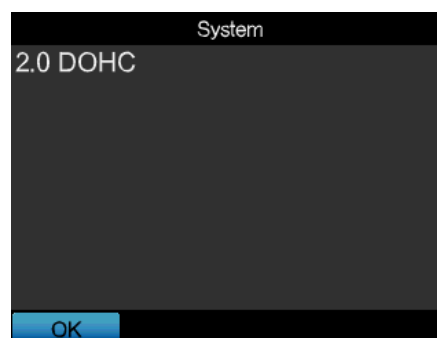
Use [UP] and [DOWN] keys to select [Engine Control System], and then press [A] key. "For this example, [Engine Control System] is selected."

Press [B] key to return to the Inspection Menu screen.



SMU-01389

5. This displays the System Information Display screen for the system being diagnosed. Press [A] key.

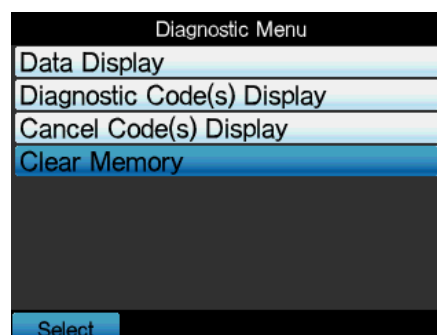


SMU-01390

6. This displays the Diagnostic Menu screen.

Use [UP] and [DOWN] keys to select [Clear Memory], and then press [A] key.

Press [B] key to return to the System Select screen.



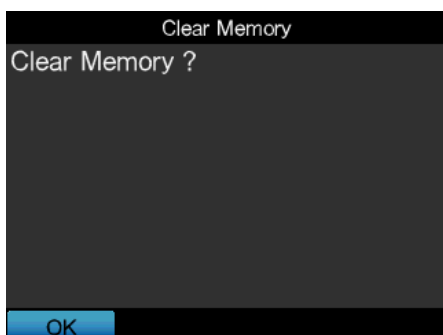
SMU-01399



7. This displays the Clear Memory Confirmation screen.

Press [A] key to execute the memory clear operation.

Press [B] key to cancel the memory clear operation and return to the Diagnostic Menu screen.



SMU-01400

8. After executing the memory clear operation, the Clear Memory Execution screen is displayed.

In accordance with the instructions on the screen, turn off the ignition switch and then press [A] key. Press [A] key to return to the Diagnostic Menu screen.



SMU-01401

#### NOTE:

There are some systems that do not have a Clear Memory item on the Diagnostic Menu screen. In these systems, DTC is cleared by turn the ignition switch off.

## Transmission System Memory Clear 2

On the Diagnostic Menu screen for the transmission system, [Clear Memory] and [Clear Memory 2] items may be displayed.

Selecting the [Clear Memory 2] item deletes DTCs and learning control values remembered by the transmission control module.

## Airbag System Memory Clear

To execute the memory clear operation in the airbag system, you must first completely service all problems. If there is even one problem remaining, the memory clear operation cannot be executed.

## Work Support

### IMPORTANT:

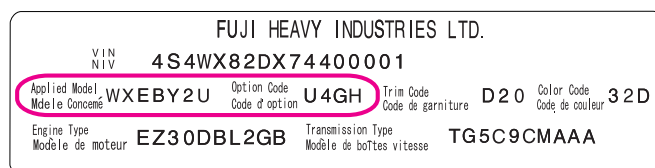
If you turn off the mode switch of DST-i or disconnect the datalink cable while the actuator is operating under the work support, the actuator may be left operated. Make sure to exit the work support before execution of the terminating operation.

## Selection of Parameter

This function is used to select/register parameters when the VDC control module has been replaced with a normal spare part.

### NOTE:

- Always execute "Clear Memory" after operating this function.
- This function cannot be used with a control module that is not a normal spare part.
- To confirm the applied model, refer to the "model No. plate" affixed to the vehicle. The location of the model No. plate is shown in the service manual.



SMU-01192



1. On the Main Menu screen, use [LEFT] and [RIGHT] keys to select [Diagnostic], and then press [A] key.



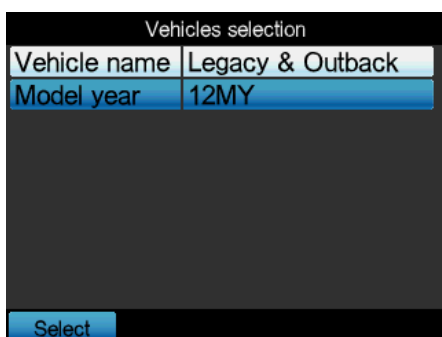
SMU-01381

2. This displays the Vehicle Select screen. Press [A] key after determination of vehicle. Press [B] key to clear the selected vehicle information. Press [B] key while a vehicle is not selected to return to the Main Menu screen.

**NOTE:**

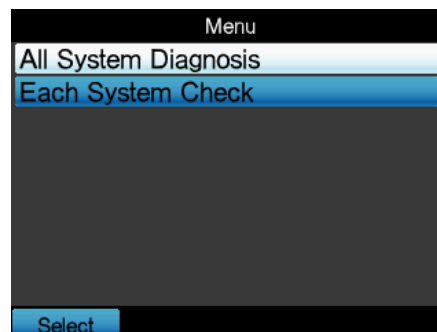
Use [LEFT] and [RIGHT] keys to select [Select] of the button display area, and pressing [A] key displays the Vehicle Name Select screen. Select a target vehicle name.

Repeat to select vehicle information such as model until a vehicle is determined after selection of a vehicle name.



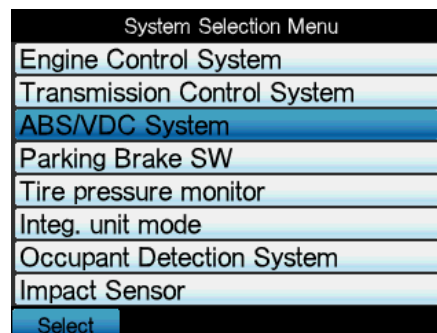
SMU-01382

3. This displays the Inspection Menu screen. Use [UP] and [DOWN] keys to select [Each System Check], and then press [A] key. Press [B] key to return to the Vehicle Select screen.



SMU-01388

4. This displays the System Select screen. Use [UP] and [DOWN] keys to select [ABS/VDC System], and then press [A] key. Press [B] key to return to the Inspection Menu screen.



SMU-01402

5. This displays the System Information Display screen for the system being diagnosed. Press [A] key.



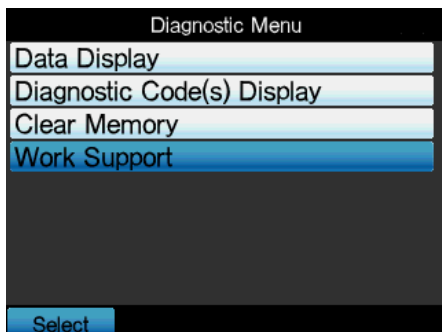
SMU-01403



6. This displays the Diagnostic Menu screen.

Use [UP] and [DOWN] keys to select [Work Support], and then press [A] key.

Press [B] key to return to the System Select screen.

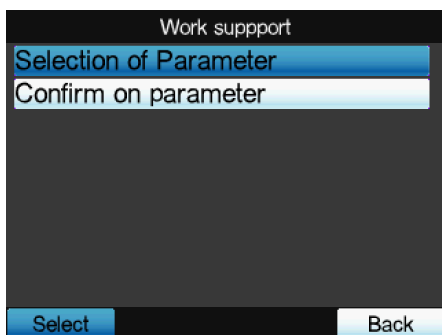


SMU-01404

7. This displays the Work Support Menu screen.

Use [UP] and [DOWN] keys to select [Selection of Parameter]. Use [LEFT] and [RIGHT] keys to select [Select] of the button display area, and press [A] key.

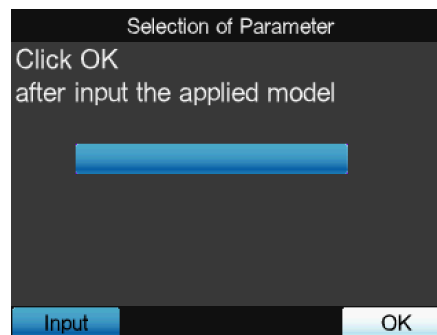
Press [B] key to return to the Diagnostic Menu screen.



SMU-01405

8. This displays the Applied Model Confirmation screen.

Use [LEFT] and [RIGHT] keys to select [Input] of the button display area, and press [A] key.



SMU-01406

9. This displays the Applied Model Input screen.

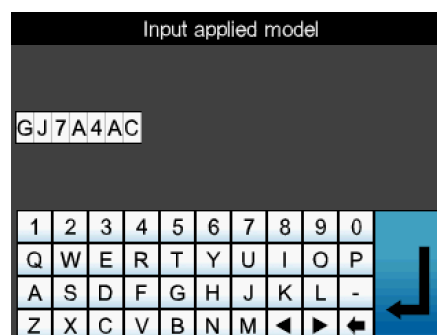
Use [UP], [DOWN], [LEFT] or [RIGHT] key to select a letter string, and press [A] key to input an applied model.

After completion of applied model input, select the [Enter] button and press [A] key.

#### NOTE:

Press [B] key during input to delete one letter in front of the cursor.

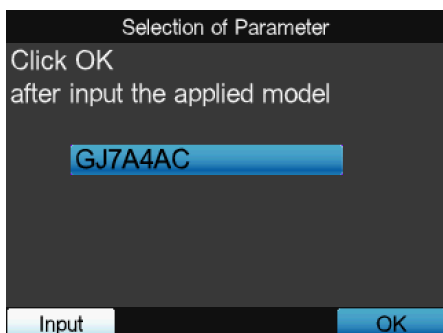
Select the triangle button at the bottom, and press [A] key to move the cursor.



SMU-01407

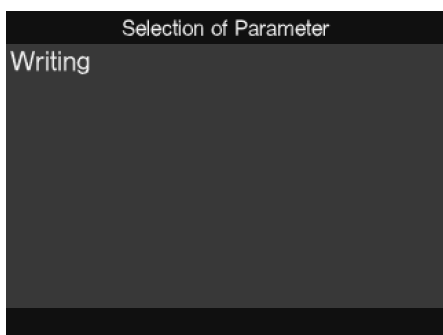


10. After completion of input, use [LEFT] or [RIGHT] key to select [OK] of the button display area of the Applied Model Confirmation screen, and then press [A] key.



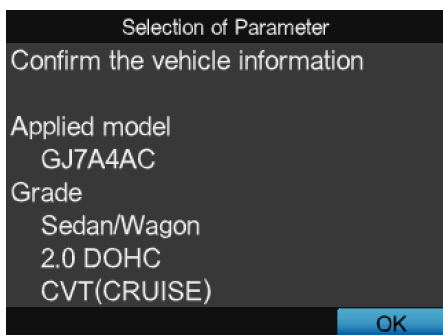
SMU-01408

11. The Parameter Writing screen will be displayed. Wait without any operation.



SMU-01409

12. This displays the Vehicle Information Confirmation screen. Make sure that applied model and grade shown on the screen are correct. Press [A] key to return to the Work Support Menu screen.



SMU-01410

## Confirm on Parameter

This function allows you to confirm the parameters registered in the VDC control module.

### NOTE:

This function can be used even if the VDC control module is not a normal spare part.

1. On the Main Menu screen, use [LEFT] and [RIGHT] keys to select [Diagnostic], and then press [A] key.



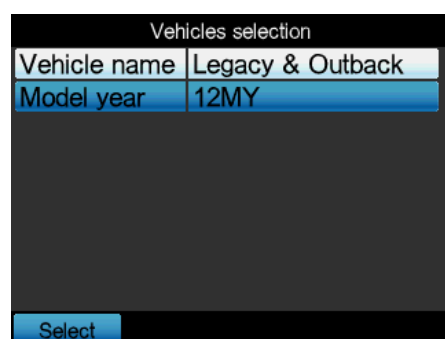
SMU-01381

2. This displays the Vehicle Select screen. Press [A] key after determination of vehicle. Press [B] key to clear the selected vehicle information. Press [B] key while a vehicle is not selected to return to the Main Menu screen.

### NOTE:

Use [LEFT] and [RIGHT] keys to select [Select] of the button display area, and pressing [A] key displays the Vehicle Name Select screen. Select a target vehicle name.

Repeat to select vehicle information such as model until a vehicle is determined after selection of a vehicle name.



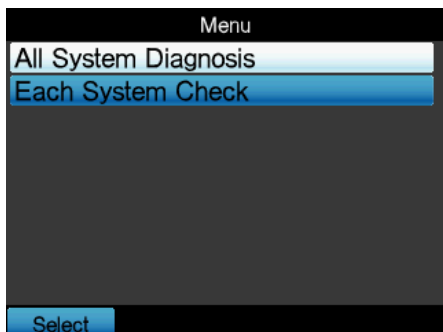
SMU-01382



3. This displays the Inspection Menu screen.

Use [UP] and [DOWN] keys to select [Each System Check], and then press [A] key.

Press [B] key to return to the Vehicle Select screen.

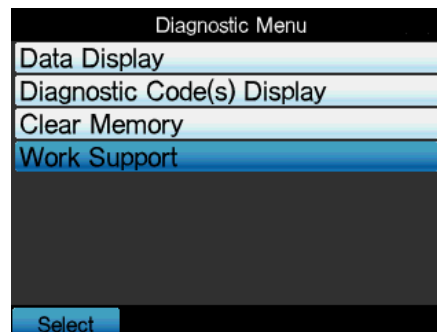


SMU-01388

6. This displays the Diagnostic Menu screen.

Use [UP] and [DOWN] keys to select [Work Support], and then press [A] key.

Press [B] key to return to the System Select screen.

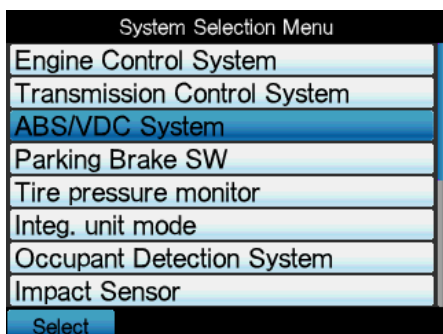


SMU-01404

4. This displays the System Select screen.

Use [UP] and [DOWN] keys to select [ABS/VDC System], and then press [A] key.

Press [B] key to return to the Inspection Menu screen.

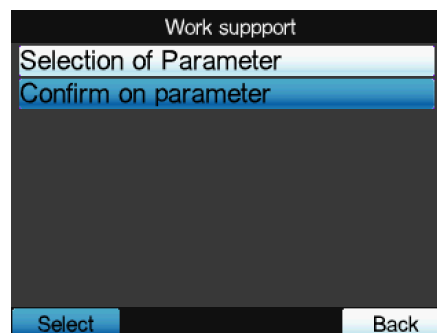


SMU-01402

7. This displays the Work Support Menu screen.

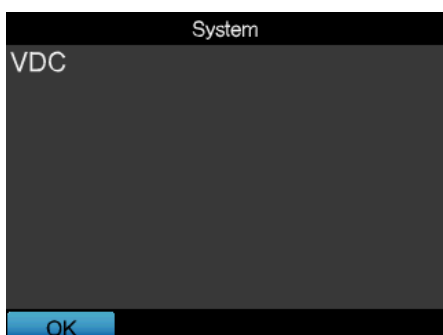
Use [UP] and [DOWN] keys to select [Confirm on parameter]. Use [LEFT] and [RIGHT] keys to select [Select] of the button display area, and press [A] key.

Press [B] key to return to the Diagnostic Menu screen.



SMU-01411

5. This displays the System Information Display screen for the system being diagnosed. Press [A] key.



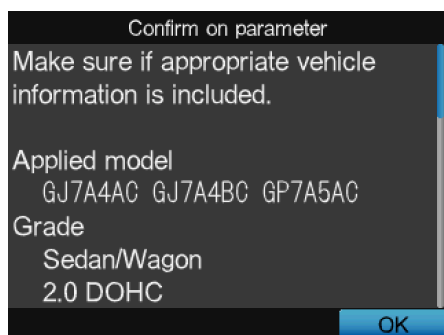
SMU-01403



8. This displays the Parameter Confirmation screen.

Make sure that applied model and grade shown on the screen are correct.

Press [A] key to return to the Work Support Menu screen.



SMU-01412

## Impact Sensor

Impact Sensor sensitivity adjustment on the security system can be done by this function.

It is necessary to refer to service manuals when you do this adjustment.

1. On the Main Menu screen, use [LEFT] and [RIGHT] keys to select [Diagnostic], and then press [A] key.



SMU-01381

2. This displays the Vehicle Select screen.

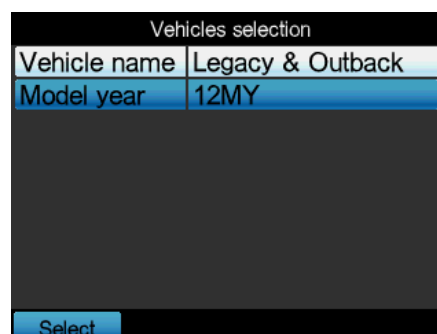
Press [A] key after determination of vehicle.

Press [B] key to clear the selected vehicle information. Press [B] key while a vehicle is not selected to return to the Main Menu screen.

### NOTE:

Use [LEFT] and [RIGHT] keys to select [Select] of the button display area, and pressing [A] key displays the Vehicle Name Select screen. Select a target vehicle name.

Repeat to select vehicle information such as model until a vehicle is determined after selection of a vehicle name.

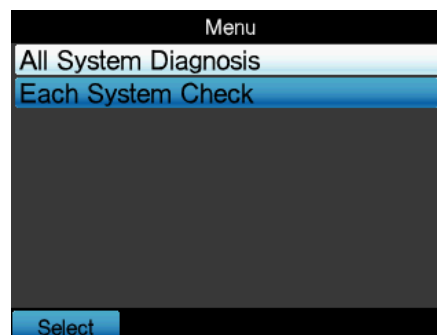


SMU-01382

3. This displays the Inspection Menu screen.

Use [UP] and [DOWN] keys to select [Each System Check], and then press [A] key.

Press [B] key to return to the Vehicle Select screen.

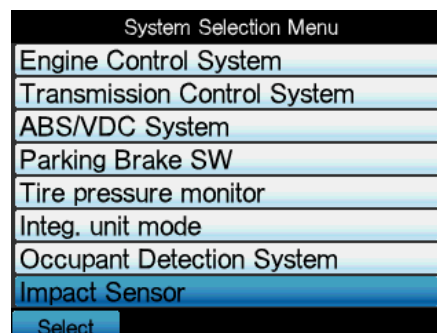


SMU-01388

4. This displays the System Select screen.

Use [UP] and [DOWN] keys to select [Impact Sensor], and then press [A] key.

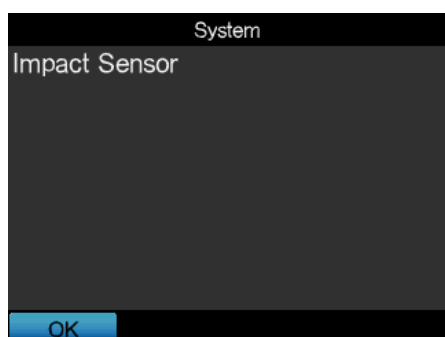
Press [B] key to return to the Inspection Menu screen.



SMU-01413



5. This displays the System Information Display screen for the system being diagnosed. Press [A] key.



SMU-01414

6. This displays the Diagnostic Menu screen. Use [UP] and [DOWN] keys to select [Work Support], and then press [A] key. Press [B] key to return to the System Select screen.



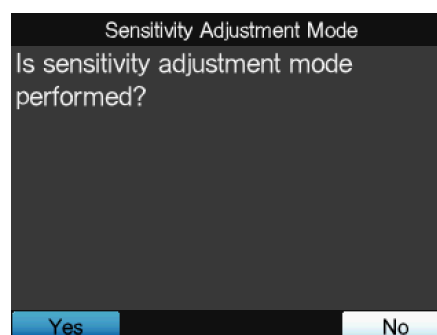
SMU-01415

7. This displays the Work Support Menu screen. Use [UP] and [DOWN] keys to select [Sensitivity Adjustment Mode]. Use [LEFT] and [RIGHT] keys to select [Select] of the button display area, and press [A] key. Press [B] key to return to the Diagnostic Menu screen.



SMU-01416

8. This displays the Sensitivity Adjustment Mode Confirmation screen. Use [LEFT] and [RIGHT] keys to select [Yes] of the button display area, and press [A] key. If you do not execute the sensitivity adjustment mode, select [No] and press [A] key to return to the Work Support Menu screen.



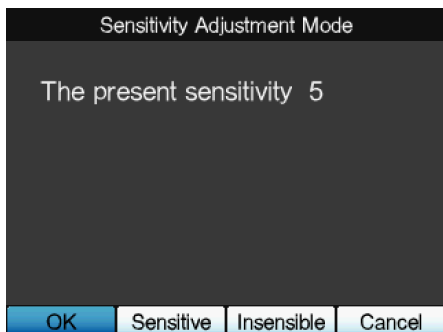
SMU-01417



9. This displays the Sensitivity Adjustment screen. Use [LEFT] and [RIGHT] keys to select [Sensitive] or [Insensible] of the button display area, and press [A] key.

After completion of sensitivity adjustment, use [LEFT] or [RIGHT] key to select [OK] of the button display area, and then press [A] key.

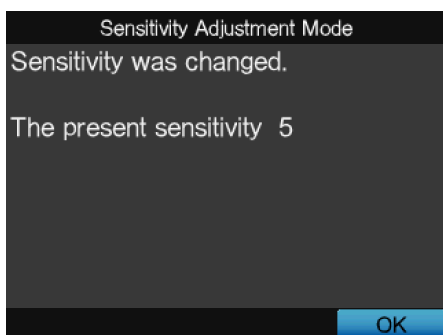
When you cancel the sensitivity adjustment mode, select [Cancel] and press [A] key to return to the Work Support Menu screen.



SMU-01418

10. This displays the Sensitivity Adjustment Completion screen.

Press [A] key to return to the Work Support Menu screen.



SMU-01419

## ID registration

Use this function to register a transmitter ID in the control module of the tire pressure monitor.

ID registration is required after the following repairs.

- Replacement of the transmitter
- Tire rotation (if the transmitter position is changed.)
- Replacement of the control module of the tire pressure monitor

It is necessary to refer to service manuals when you do this adjustment.

Adjust the tire pressure of every tire to the standard value.

1. On the Main Menu screen, use [LEFT] and [RIGHT] keys to select [Diagnostic], and then press [A] key.



SMU-01381

2. This displays the Vehicle Select screen.

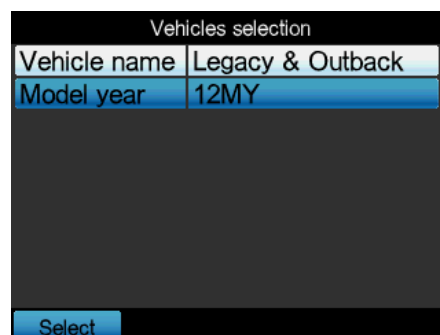
Press [A] key after determination of vehicle.

Press [B] key to clear the selected vehicle information. Press [B] key while a vehicle is not selected to return to the Main Menu screen.

### NOTE:

Use [LEFT] and [RIGHT] keys to select [Select] of the button display area, and pressing [A] key displays the Vehicle Name Select screen. Select a target vehicle name.

Repeat to select vehicle information such as model until a vehicle is determined after selection of a vehicle name.

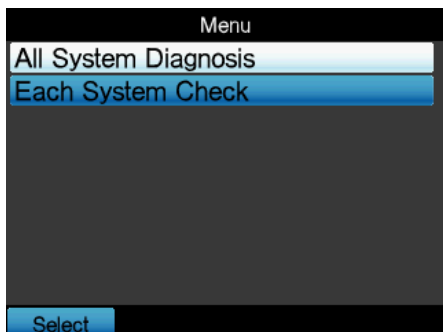


SMU-01382



3. This displays the Inspection Menu screen.

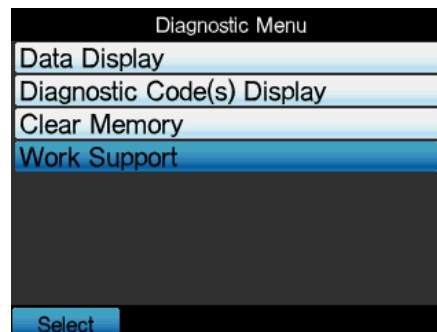
Use [UP] and [DOWN] keys to select [Each System Check], and then press [A] key.  
Press [B] key to return to the Vehicle Select screen.



SMU-01388

6. This displays the Diagnostic Menu screen.

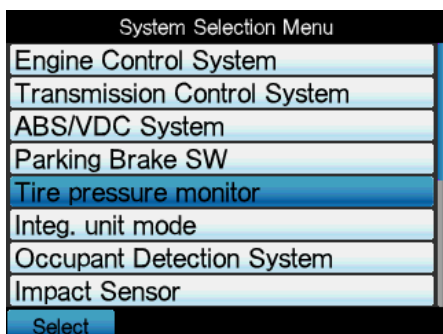
Use [UP] and [DOWN] keys to select [Work Support], and then press [A] key.  
Press [B] key to return to the System Select screen.



SMU-01422

4. This displays the System Select screen.

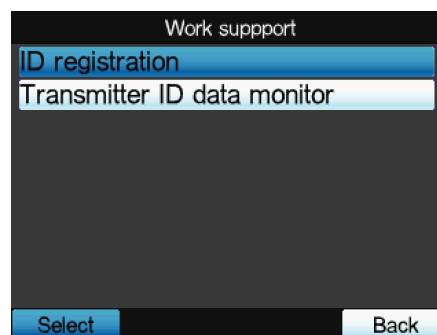
Use [UP] and [DOWN] keys to select [Tire pressure monitor], and then press [A] key.  
Press [B] key to return to the Inspection Menu screen.



SMU-01420

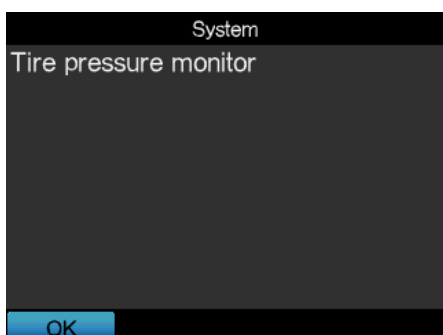
7. This displays the Work Support Menu screen.

Use [UP] and [DOWN] keys to select [ID registration]. Use [LEFT] and [RIGHT] keys to select [Select] of the button display area, and press [A] key.  
Press [B] key to return to the Diagnostic Menu screen.



SMU-01423

5. This displays the System Information Display screen for the system being diagnosed. Press [A] key.



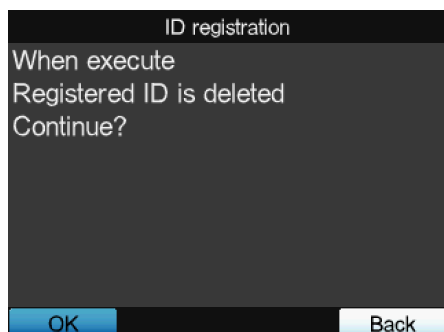
SMU-01421



8. This displays the ID Registration Confirmation screen.

Use [LEFT] and [RIGHT] keys to select [OK] of the button display area, and press [A] key.

If you do not execute ID registration, select [Back] and press [A] key to return to the Work Support Menu screen.

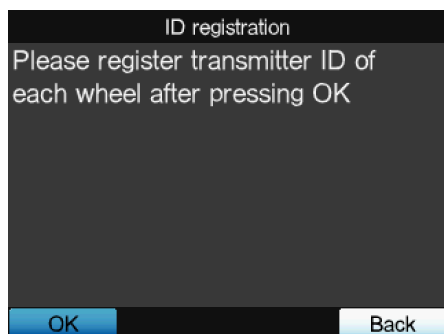


SMU-01424

9. This displays the ID Registration screen.

Use [LEFT] and [RIGHT] keys to select [OK] of the button display area, and press [A] key.

If you do not execute ID registration, select [Back] and press [A] key to return to the ID Registration Confirmation screen.



SMU-01425

10. This displays the ID Registration Status Confirmation screen.

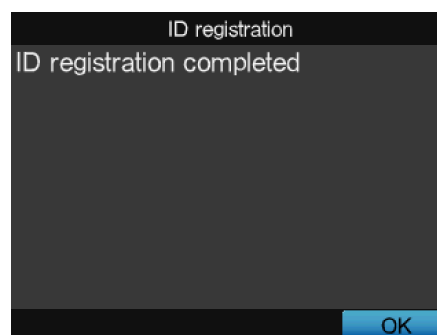
After completion of ID registration of each tire, the display changes from [incomplete] to [complete].



SMU-01426

11. This displays the ID Registration Completion screen.

Press [A] key to return to the Work Support Menu screen.



SMU-01427

## Transmitter ID data monitor

This function allows you to confirm the registered transmitter ID.

This function also transmits the ID data from the transmitter to the control module of the tire pressure monitor.

1. On the Main Menu screen, use [LEFT] and [RIGHT] keys to select [Diagnostic], and then press [A] key.



SMU-01381



2. This displays the Vehicle Select screen.

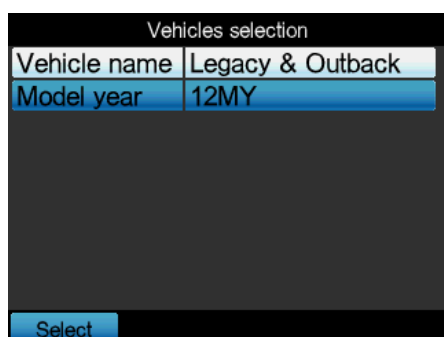
Press [A] key after determination of vehicle.

Press [B] key to clear the selected vehicle information. Press [B] key while a vehicle is not selected to return to the Main Menu screen.

**NOTE:**

Use [LEFT] and [RIGHT] keys to select [Select] of the button display area, and pressing [A] key displays the Vehicle Name Select screen. Select a target vehicle name.

Repeat to select vehicle information such as model until a vehicle is determined after selection of a vehicle name.

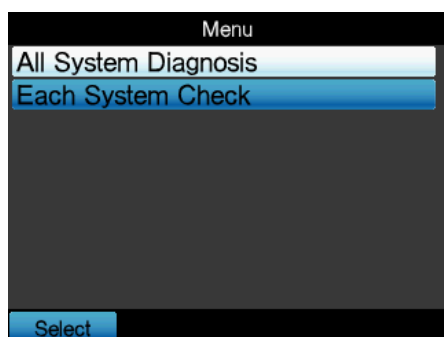


SMU-01382

3. This displays the Inspection Menu screen.

Use [UP] and [DOWN] keys to select [Each System Check], and then press [A] key.

Press [B] key to return to the Vehicle Select screen.

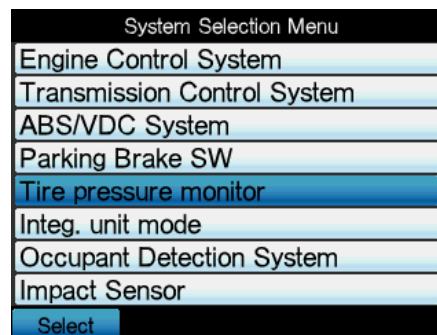


SMU-01388

4. This displays the System Select screen.

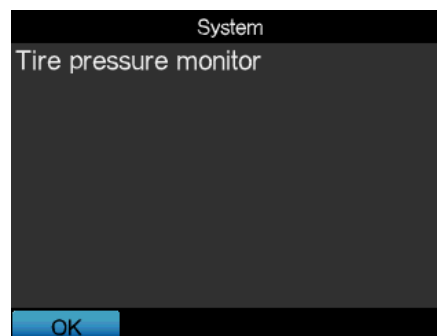
Use [UP] and [DOWN] keys to select [Tire pressure monitor], and then press [A] key.

Press [B] key to return to the Inspection Menu screen.



SMU-01420

5. This displays the System Information Display screen for the system being diagnosed. Press [A] key.

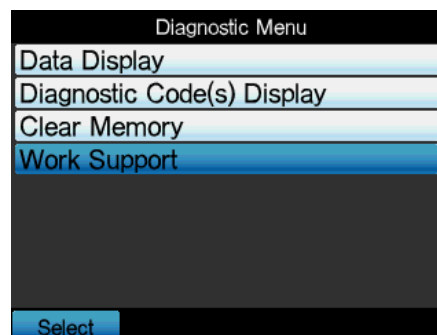


SMU-01421

6. This displays the Diagnostic Menu screen.

Use [UP] and [DOWN] keys to select [Work Support], and then press [A] key.

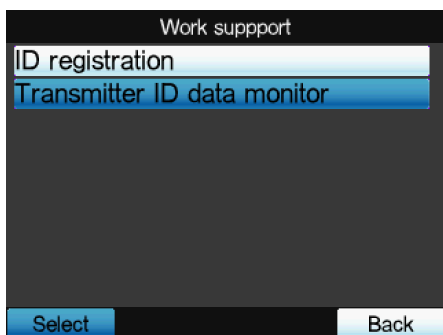
Press [B] key to return to the System Select screen.



SMU-01422

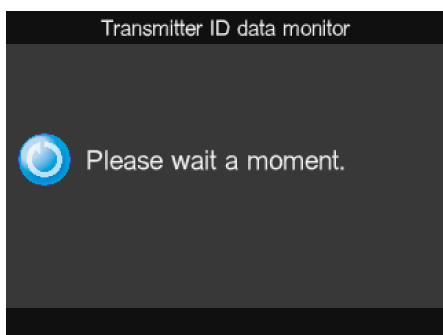


7. This displays the Work Support Menu screen.  
 Use [UP] and [DOWN] keys to select [Transmitter ID data monitor]. Use [LEFT] and [RIGHT] keys to select [Select] of the button display area, and press [A] key.  
 Press [B] key to return to the Diagnostic Menu screen.



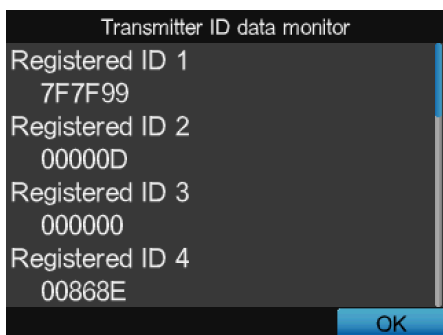
SMU-01428

8. The ID Reading screen will be displayed. Wait without any operation.



SMU-01429

9. This displays the ID Data Monitor screen.  
 Press [A] key to return to the Work Support Menu screen.



SMU-01430

## Body Integrated Module Function Setting (Control Module Customizing)

The following procedure can be used to configure operational details, operation time, and other settings for the actuators controlled by the body integrated module.

### IMPORTANT:

Make sure you perform setting operations in accordance with the Service Manual when using the unit customization function. Configuring the wrong settings can cause abnormal system operation and other problems.

1. On the Main Menu screen, use [LEFT] and [RIGHT] keys to select [Diagnostic], and then press [A] key.



SMU-01381

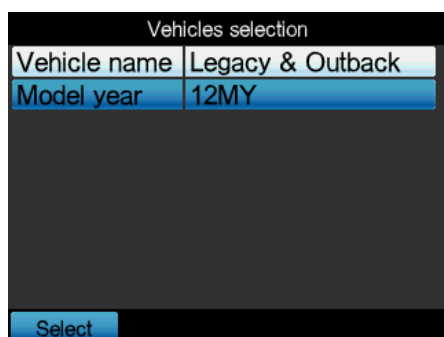
2. This displays the Vehicle Select screen.  
 Press [A] key after determination of vehicle.  
 Press [B] key to clear the selected vehicle information. Press [B] key while a vehicle is not selected to return to the Main Menu screen.



**NOTE:**

Use [LEFT] and [RIGHT] keys to select [Select] of the button display area, and pressing [A] key displays the Vehicle Name Select screen. Select a target vehicle name.

Repeat to select vehicle information such as model until a vehicle is determined after selection of a vehicle name.

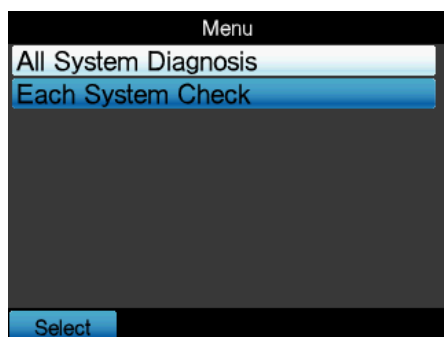


SMU-01382

3. This displays the Inspection Menu screen.

Use [UP] and [DOWN] keys to select [Each System Check], and then press [A] key.

Press [B] key to return to the Vehicle Select screen.

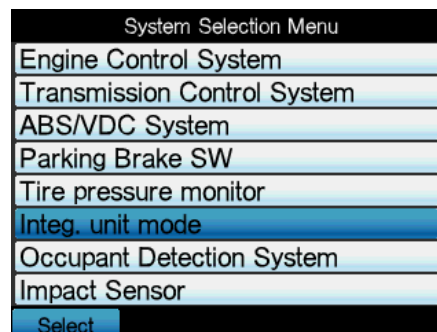


SMU-01388

4. This displays the System Select screen.

Use [UP] and [DOWN] keys to select [Integ. unit mode], and then press [A] key.

Press [B] key to return to the Inspection Menu screen.

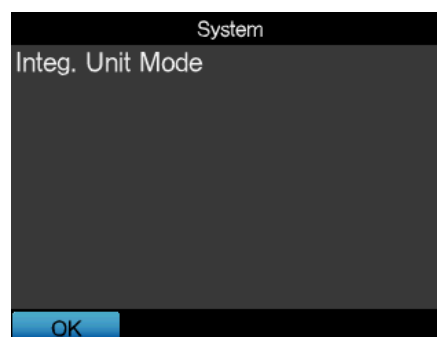


SMU-01431

**NOTE:**

- To perform Automatic Light and Wiper Unit Customizing, select [Light & Wiper] at above screen and begin procedure.
- After removing or replacing rain/light sensor, initializing the sensor is necessary by selecting [Automatic Light and Wiper] on the above screen.
- To perform Auto Start Stop Unit Customizing, select [Auto Start Stop] at above screen and begin procedure.
- To perform Combination meter Unit Customizing, select [Combination meter] at above screen and begin procedure.

5. This displays the System Information Display screen for the system being diagnosed. Press [A] key.



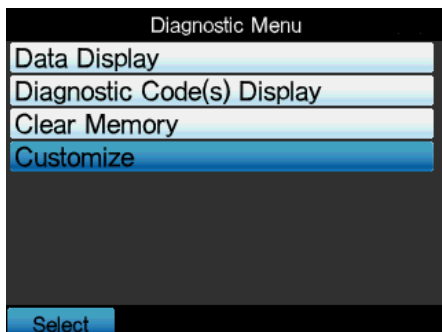
SMU-01432



6. This displays the Diagnostic Menu screen.

Use [UP] and [DOWN] keys to select [Customize], and then press [A] key.

Press [B] key to return to the System Select screen.



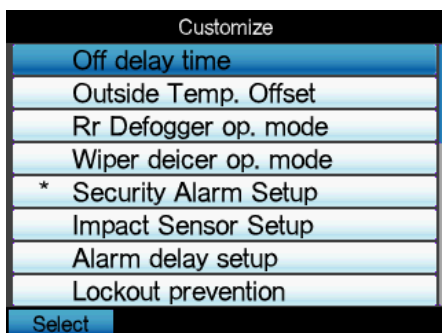
SMU-01433

7. This displays the Customization Items Select screen.

Use [UP] and [DOWN] keys to select the setting(s) to be configured, and then press [A] key.

"For this example, [Off delay time] is selected."

Press [B] key to return to the Diagnostic Menu screen.



SMU-01434

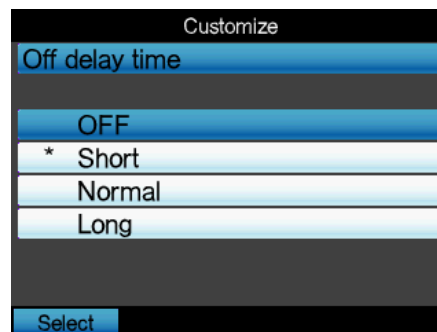
8. This displays the Customization Setting Select screen.

Use [UP] and [DOWN] keys to select the desired setting(s), and press [A] key.

Press [B] key to return to the Customization Items Select screen.

#### NOTE:

"\*" is displayed at the left side of the current setting value(s).

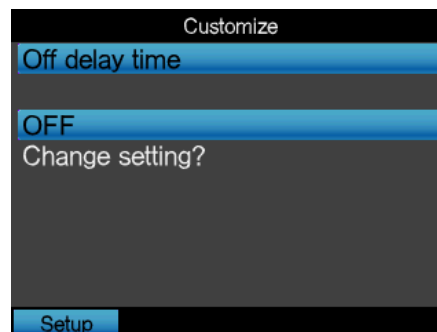


SMU-01435

9. This displays the Customization Setting Confirmation screen.

Press [A] key to change the current setting(s) to the displayed setting(s).

Press [B] key to return to the Customization Items Select screen.



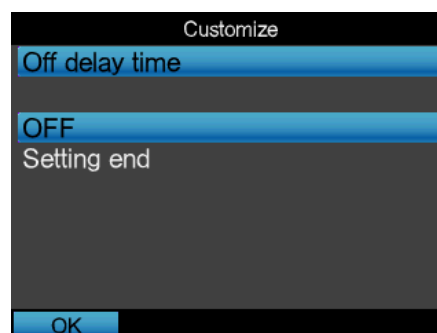
SMU-01436

10. This displays the Customization Setting Completion screen.

Press [A] key to return to the Customization Items Select screen.

#### NOTE:

"\*" is displayed at the left side of the item(s) of which setting(s) is changed.



SMU-01437



## Registering the Immobilizer

### NOTE:

For information about registering immobilizer, please refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".

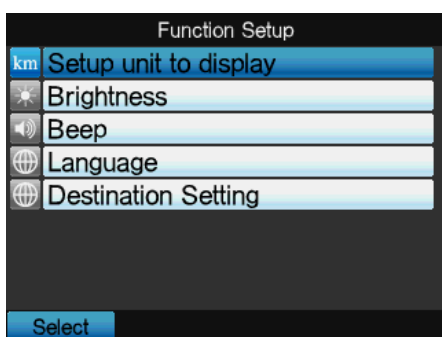
## Function Setup of DST-i

1. On the Main Menu screen, use [LEFT] and [RIGHT] keys to select [Function Setup], and then press [A] key.



SMU-01438

2. This displays the Function Setup Items Select screen. Use [UP] and [DOWN] keys to select the setting(s) to be configured, and then press [A] key. Press [B] key to return to the Main Menu screen.

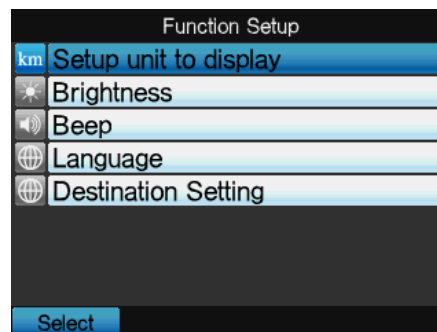


SMU-01439

## Selecting Units

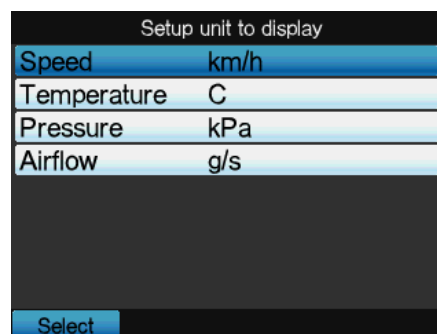
This item specifies the units for sampled items displayed on DST-i screens.

1. On the Function Setup Items Select screen, use [UP] and [DOWN] keys to select [Unit], and then press [A] key.



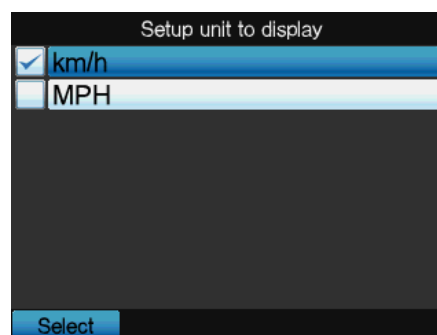
SMU-01439

2. This displays the Unit Setting Items Select screen. Select the setting(s) to be configured, and then press [A] key. Press [B] key to return to the Function Setup Items Select screen.



SMU-01440

3. This displays the Unit Select screen. Use [UP] and [DOWN] keys to desired units. Press [A] key to change the current setting(s) and return to the Unit Setting Items Select screen. Press [B] key to return to the Unit Setting Items Select screen without setting change.



SMU-01441



## Brightness Setting

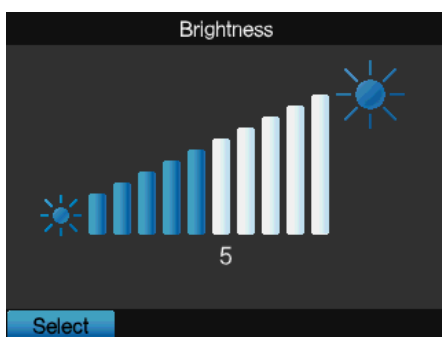
The brightness of the LCD can be adjusted to make its contents easier to view.

1. On the Function Setup Items Select screen, use [UP] and [DOWN] keys to select [Brightness], and then press [A] key.



SMU-01442

2. This displays the Brightness Setting screen. Use [LEFT] and [RIGHT] keys to adjust the brightness. Press [A] key to change the current setting(s) and return to the Function Setup Items Select screen. Press [B] key to return to the Function Setup Items Select screen without setting change.

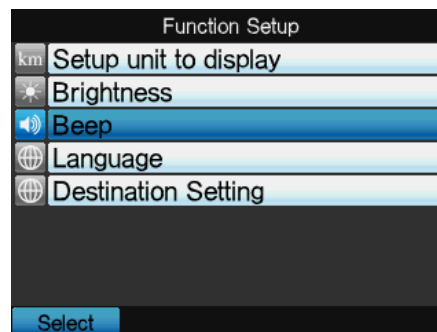


SMU-01443

## Buzzer Setting

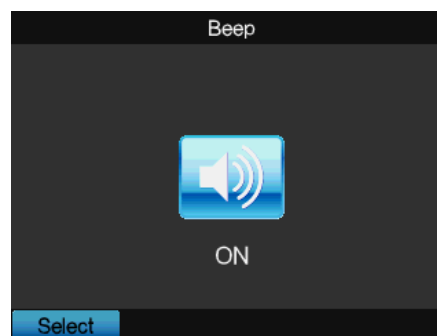
This setting turns the DST-i key operation confirmation buzzer on and off.

1. On the Function Setup Items Select screen, use [UP] and [DOWN] keys to select [Beep], and then press [A] key.



SMU-01444

2. This displays the Buzzer Setting screen. Use [LEFT] and [Right] keys to select ON or OFF. Press [A] key to change the current setting(s) and return to the Function Setup Items Select screen. Press [B] key to return to the Function Setup Items Select screen without setting change.

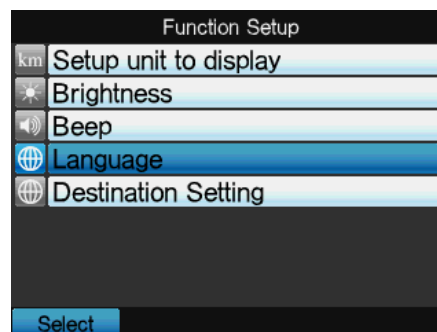


SMU-01445

## Selecting a User Language

This item can be used to select the display language for DST-i screens.

1. On the Function Setup Items Select screen, use [UP] and [DOWN] keys to select [Language], and then press [A] key.



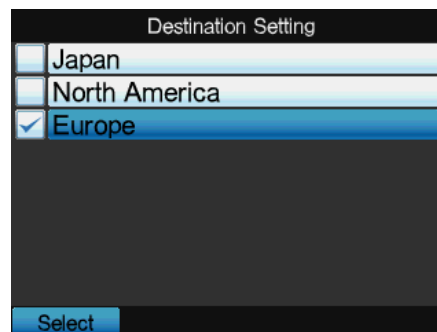
SMU-01446



2. This displays the Language Select screen.  
 Use [UP] and [DOWN] keys to select the desired language.  
 Press [A] key to change the current setting(s) and return to the Function Setup Items Select screen.  
 Press [B] key to return to the Function Setup Items Select screen without setting change.



SMU-01447



SMU-01449

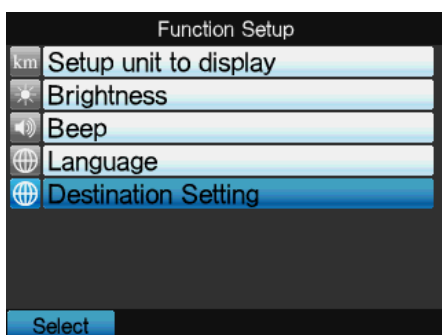
## Area Setting

A sales area of diagnosis target vehicle can be set.

### NOTE:

Diagnosis-available vehicle and system vary in the case of a area.

1. On the Function Setup Items Select screen, use [UP] and [DOWN] keys to select [Destination Setting], and then press [A] key.



SMU-01448

2. This displays the Area Select screen.  
 Use [UP] and [DOWN] keys to select the desired area.  
 Press [A] key to change the current setting(s) and return to the Function Setup Items Select screen.  
 Press [B] key to return to the Function Setup Items Select screen without setting change.



## SDI System Menu

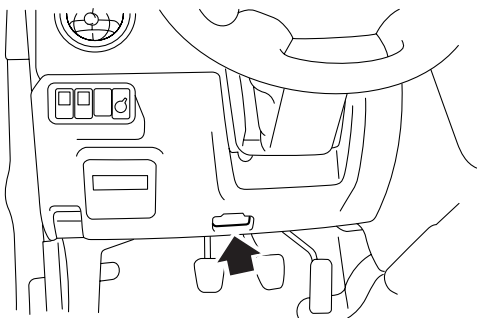
The SDI System Menu can be used to perform diagnosis of SDI LCD, LED, keypad, and buzzer operation, and self-diagnosis of SDI memory. This menu also can be used to configure the settings of the SDI built-in clock, the self-shutoff time, display brightness and contrast, and the key operation confirmation buzzer.

### NOTE:

You can carry out this function only when interface box to use is SDI.

## Getting Ready (Starting Up the SDI in the System Mode)

1. Plug the main connector of the diagnosis cable into the SDI diagnosis communication connector, and secure it in place with the two screws.



SMU-00113

2. After pressing the SDI [MENU] key, plug the vehicle connector of the diagnosis cable into the vehicle data link connector, and then check to make sure that the PWR LED of the SDI lights.

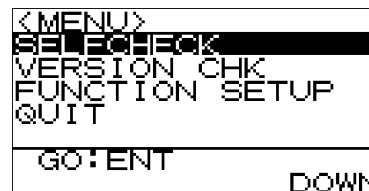
### NOTE:

SDI power will turn on automatically when the diagnosis cable is connected to the vehicle. If the PWR LED of the SDI does not light, turn on the vehicle's ignition switch or start the engine, and then check if the PWR LED lights when you press the SDI [PWR] key while holding down the SDI [MENU] key.

3. The software version screen will appear on the display, and then it will be replaced by the system MENU screen.

Use the [UP] and [DOWN] keys to select the desired item, and then press the [ENT] key.

To quit the system mode, select [QUIT] on the [MENU] screen.



SMU-00322

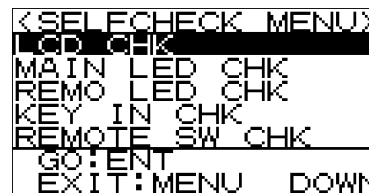
### NOTE:

SDI power may turn off automatically if no SDI operation is performed for a preset period. This is indicated when the PWR LED goes out.

If this happens, hold down the [MENU] key press the [PWR] key while holding down the [MENU] key to turn the SDI back on.

## SELF CHECK (SDI Self-check)

Selecting {SELF CHECK} on the MENU screen causes the SELF CHECK MENU to appear on the display. Use the [UP] and [DOWN] keys to select the desired item, and then press the [ENT] key. To return to the system MENU screen, press the [MENU] key.



SMU-00323

### NOTE:

Take the required repair immediately, if you discover an abnormality when using SDI self-diagnosis.

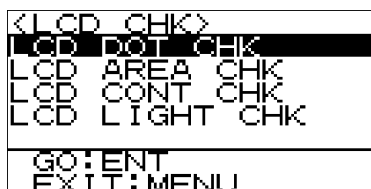


## LCD CHECK

The LCD CHECK items provide tools for checking the display for defective LCD dots, and the draw area, contrast, and the backlight of the LCD.

Use the [UP] and [DOWN] keys to select the desired item on the LCD CHECK screen, and then press the [ENT] key.

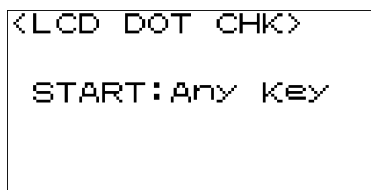
To return to the SELF CHECK screen, press the [MENU] key.



SMU-00324

### 1. LCD DOT CHECK

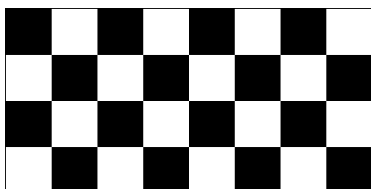
This item checks the display for defective LCD dots. Press any key on the key pad.



SMU-00521

This causes the black and white areas of the display to flash alternately, which makes it possible to check whether LCD dots turn on and off normally. An LCD dot is defective if a black dot remains black within a white area, or if a white dot remains white within a black area.

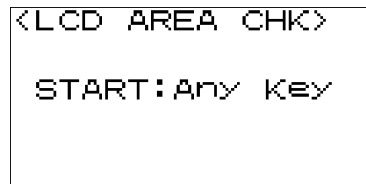
After checking the LCD dots, press the [ENT] key.



SMU-00326

### 2. LCD AREA CHECK

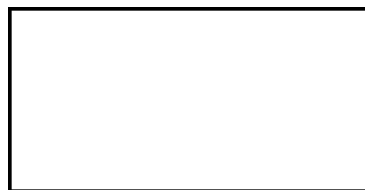
This item checks the LCD draw area. Press any key on the key pad.



SMU-00522

Check to make sure that a black border appears along the four edges of the display.

After checking the LCD draw area, press the [ENT] key.



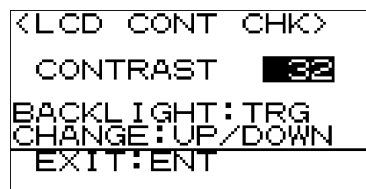
SMU-00328

### 3. LCD CONT CHECK

This item adjusts the contrast of the LCD display. Pressing the [UP] key makes LCD contrast darker, while the [DOWN] key makes LCD contrast lighter. After checking the LCD contrast, press the [ENT] key.

#### NOTE:

You can check display contrast by pressing the [TRG] key on the keypad to turn off the LCD backlight. To turn the LCD backlight back on, press the [TRG] key again.



SMU-00329



#### 4. LCD BACKLIGHT CHECK

This item checks whether the LCD backlight is lit. After checking the LCD backlight, press the [ENT] key.

```
<LCD LIGHT CHK>
LCD LIGHT ON?
EXIT:ENT
```

SMU-00330

#### MAIN LED CHECK

This item checks if the SIG LED lights or flashes red or green in accordance with the status of the SDI. This check confirms the operational status of the SIG LED.

Use the [UP] and [DOWN] keys to select the desired item on the MAIN LED CHECK screen, and then press the [ENT] key.

To return to the SELF CHECK screen, press the [MENU] key.

```
<MAIN LED CHK>
LED GREEN CHK
LED RED CHK
GO:ENT
EXIT:MENU
```

SMU-00331

#### 1. LED GREEN CHECK

This item checks whether the SIG LED repeats a pattern of four green flashes followed by 10 seconds of steady green lighting.

After checking the main LED (green), press the [ENT] key.

```
<MAIN LED CHK>
MAIN LED GREEN?
EXIT:ENT
```

SMU-00332

#### 2. LED RED CHECK

This item checks whether the SIG LED repeats a pattern of four red flashes followed by 10 seconds of steady red lighting.

After checking the main LED (red), press the [ENT] key.

```
<MAIN LED CHK>
MAIN LED RED?
EXIT:ENT
```

SMU-00333

#### REMO LED CHECK

This item checks if the SIGNAL LED on the driving recorder remote box lights, or flashes green or red. This check confirms the operational status of the SIGNAL LED.

Use the [UP] and [DOWN] keys to select the desired item on the REMO LED CHECK screen, and then press the [ENT] key.

To return to the SELF CHECK screen, press the [MENU] key.

```
<REMO LED CHK>
LED GREEN CHK
LED RED CHK
GO:ENT
EXIT:MENU
```

SMU-00334

#### 1. LED GREEN CHECK

This item checks whether the SIGNAL LED repeats a pattern of four green flashes followed by 10 seconds of steady green lighting.

After checking the remote control LED (green), press the [ENT] key.

```
<REMO LED CHK>
REMO LED GREEN?
EXIT:ENT
```

SMU-00335



## 2. LED RED CHECK

This item checks whether the SIGNAL LED repeats a pattern of four red flashes followed by 10 seconds of steady red lighting.

After checking the remote control LED (green), press the [ENT] key.

```
<REMO LED CHK>
REMO LED RED?
EXIT:ENT
```

SMU-00336

## KEY IN CHECK

This item checks for operational defects in the SDI keypad keys. Key names appear on the display in the following sequence: UP → DOWN → RIGHT → LEFT → ENT → TRG → C → MENU. Press the directed key in order.

If pressing any key besides [MENU] does not switch to the next keypad key operation screen, press the [MENU] key to quit.

```
<KEY IN CHK>
Push UP Key
CANCEL:MENU
```

SMU-00337

## REMOTE SW CHECK

This item checks operation of the TRIGGER switch of the driving recorder remote box.

To check operation of the TRIGGER switch, press the [ENT] key.

```
<REMO SW CHK>
REMO TRG CHK
GO:ENT
EXIT:MENU
```

SMU-00338

Operate the TRIGGER switch as instructed by the messages that appear on the display.

The check is complete when "CHECK OK!" appears on the display. Press the [ENT] key.

To return to the [SELF CHECK] screen, press the [MENU] key.

```
<REMO TRG CHK>
Keep Pushing
REMOTE TRG SW
CANCEL:MENU
```

SMU-00339

## BEEP CHECK

This item checks the frequency and the volume of the SDI buzzer.

Use the [UP] and [DOWN] keys to select the desired item on the BEEP CHECK screen, and then press the [ENT] key.

To return to the SELF CHECK screen, press the [MENU] key.

```
<BEEP CHK>
BEEP FREQ CHK
BEEP VOL CHK
GO:ENT
EXIT:MENU
```

SMU-00340

### 1. BEEP FREQ CHECK

This item can be used to check buzzer operation and adjust its frequency.

Selecting it displays the current buzzer frequency setting.

Press the [UP] key to raise the buzzer frequency, or the [DOWN] key to lower the buzzer frequency.

After checking the buzzer frequency, press the [ENT] key.

```
<BEEP FREQ CHK>
FREQUENCY 4000
CHANGE:UP/DOWN
EXIT:ENT
```

SMU-00341



## 2. BEEP VOL CHECK

This item can be used to check buzzer operation and adjust its volume.

Selecting this item displays the current buzzer volume level.

Press the [UP] key to increase buzzer volume, or the [DOWN] key to decrease buzzer volume.

After checking the buzzer volume, press the [ENT] key.

```

<BEEP VOL CHK>
VOLUME  88
CHANGE:UP/DOWN
EXIT:ENT
  
```

SMU-00342

## RAM CHECK

This item executes a SDI self-check of the SDI built-in RAM, and displays the result.

When completion of the self-diagnosis is indicated by "CHECK OK!" or "CHECK NG" on the display, press the [ENT] key.

```

<RAM CHK>
CHECK OK!
EXIT:ENT
  
```

SMU-00343

## ROM CHECK

This item executes a SDI self-check of the SDI built-in ROM, and displays the result.

Check the display after the self-check is complete.

ROM is normal if the hexadecimal values that appear under "WrSUM" and "CalSUM" on the display are identical.

After checking the ROM check, press the [ENT] key.

### NOTE:

Use the [UP] and [DOWN] keys to scroll screen contents.

```

Mod  WrSUM  CalSUM
IPL  ABB7    ABB7
OS   8B12    8B12
ExF  ----    ----
STD  3C9D    3C9D
ExC  DD5C    DD5C
OK:ENT
NG:MENU  DOWN
  
```

SMU-00344

## VERSION CHECK

This item provides a means for checking the SDI software version.

Make sure that the version that appears during data communication is the same as the version shown on the version check screen.

After checking the version check, press the [ENT] key.

```

SDI
Ver.1.0.59
EXIT:ENT
  
```

SMU-00523

## RTC TIMER CHECK

This item provides a means to check whether the date and time setting operation of the SDI built-in clock is normal.

Check to make sure that the year, month, day, day of the week, hour, minute, and second indicators in the figure below change to Jan/01/2000 (Sat) 00:00:00.

After checking the SDI built-in clock IC, press the [ENT] key.

```

<RTC TIMER CHK>
Dec/31/1999(Fri)
23:59:55
EXIT:ENT
  
```

SMU-00350

## NOW TIME CHECK

This item displays the current date and time setting of the SDI built-in clock.

To return to the SELF CHECK screen, press the [MENU] key.

```

<NOW TIME CHK>
May/22/2004(Sat)
12:10:15
EXIT:MENU
  
```

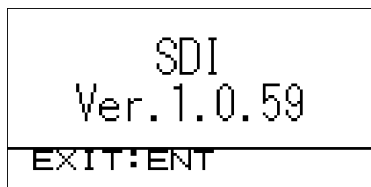
SMU-00347



## VERSION CHECK

Selecting {VERSION CHECK} on the MENU screen causes the SDI software version screen to appear on the display.

To return to the system MENU screen, press the [ENT] key.

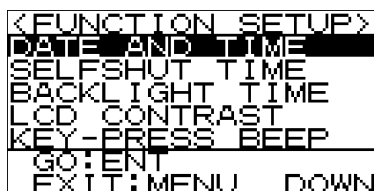


SMU-00523

## FUNCTION SETUP (SDI Function Setup)

Selecting {FUNCTION SETUP} on the MENU screen causes the FUNCTION SETUP screen to appear on the display. Use the [UP] and [DOWN] keys to select the desired item, and then press the [ENT] key.

To return to the system MENU screen, press the [MENU] key.



SMU-00351

## DATE AND TIME

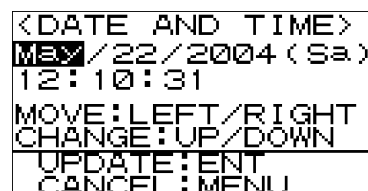
This item provides a means for configuring the date and time setting of the SDI built-in clock.

Use the [RIGHT] and [LEFT] keys to move to the desired setting, and then use the [UP] and [DOWN] keys to configure the setting as desired.

After configuring the settings, press the [ENT] key. To cancel the setting procedure, press the [MENU] key.

### NOTE:

The day of the week setting is configured automatically in accordance with the date that set.



SMU-00352

## SELF SHUT TIME

This item provides a means for configuring the SDI self-shutoff time setting.

While viewing the display screen "TIME" item, use the [UP] and [DOWN] keys to configure the setting.

### NOTE:

Selecting OFF turns off the SDI self-shutoff feature. Note that turning off SDI self-shutoff runs the risk of running down the vehicle's battery.

After configuring the settings, press the [ENT] key. To cancel the setting procedure, press the [MENU] key.



SMU-00353



## BACKLIGHT TIME

The LCD backlight turns off automatically if no operation of SDI keys is performed for a preset period. This setting specifies length of time of the preset period.

While viewing the display screen “TIME” item, use the [UP] and [DOWN] keys to configure the setting.

### NOTE:

- Selecting OFF keeps the LCD backlight turned off.
- Selecting FOREVER keeps the LCD backlight turned on.

After configuring the settings, press the [ENT] key. To cancel the setting procedure, press the [MENU] key.

```

<BACKLIGHT TIME>
TIME  FOREVER
-----
SELECT:UP/DOWN
UPDATE:ENT
CANCEL:MENU
  
```

SMU-00354

## LCD CONTRAST

The contrast of the LCD can be adjusted to make its contents easier to view.

Pressing the [UP] key makes LCD contrast darker, while the [DOWN] key makes LCD contrast lighter.

After configuring the contrast setting, press the [ENT] key.

To cancel the setting procedure, press the [MENU] key.

### NOTE:

You can check display contrast by pressing the [TRG] key on the keypad to turn off the LCD backlight. To turn the LCD backlight back on, press the [TRG] key again.

```

<LCD CONTRAST>
CONTRAST  32
-----
BACKLIGHT:TRG
CHANGE:UP/DOWN
UPDATE:ENT
CANCEL:MENU
  
```

SMU-00355

## KEY-PRESS BEEP

This setting turns the SDI key operation confirmation buzzer on and off.

While viewing the display screen “BEEP” item, use the [UP] and [DOWN] keys to configure buzzer ON/OFF setting.

After configuring the settings, press the [ENT] key. To cancel the setting procedure, press the [MENU] key.

```

<KEY-PRESS BEEP>
BEEP  ON
-----
CHANGE:UP/DOWN
UPDATE:ENT
CANCEL:MENU
  
```

SMU-00356



## List of Contents on Displayed Data

### NOTE:

Items and contents of data displayed on the screen may differ from this list due to models, specifications and upgrading of the SUBARU select monitor III and/or vehicles.

## Engine

No.	Items	Unit of measure	Contents	Remarks
1	Engine Load	%	Current air volume ratio if the fully opened air volume in the present engine speed is 100%.	
2	Coolant Temp.	°C °F	Value calculated from the output value of the engine coolant temperature sensor.	
3	A/F Correction #1	%	Main correction value for A/F feedback control (bank 1)	
4	A/F Learning #1	%	Main learning value for A/F feedback control (bank 1)	
5	A/F Correction #2	%	Main correction value for A/F feedback control (bank 2)	
6	A/F Learning #2	%	Main learning value for A/F feedback control (bank 2)	
7	Mani. Absolute Pressure	kPa mmHg inHg psig	Pressure value calculated from the manifold absolute pressure sensor (absolute value)	
8	Engine Speed	rpm	Calculated from the crankshaft position sensor signal.	
9	Vehicle Speed	km/h MPH	Value calculated from the output value of the vehicle speed sensor.	
10	Ignition Timing	deg	Ignition timing control value of the engine control module.	
11	Intake Air Temp.	°C °F	Intake air temperature calculated from the output value of the intake air temperature sensor.	
12	Mass Air Flow	g/s lb/m	Mass air flow calculated from the output value of the air flow sensor.	
13	Throttle Opening Angle	%	Throttle opening angle calculated from the output value of the throttle position sensor.	
14	Front O2 Sensor #1	V	Output value of the front O2 sensor (bank 1). Input value to the engine control module.	



No.	Items	Unit of measure	Contents	Remarks
15	Rear O2 Sensor	V	Output value to the rear O2 sensor. Input value to the engine control module.	
16	Front O2 Sensor #2	V	Output value of the front O2 sensor (bank 2). Input value to the engine control module.	
17	Battery Voltage	V	Battery voltage. Input value to the engine control module.	
18	Air Flow Sensor Voltage	V	Output value of the air flow sensor. Input value to the engine control module.	
19	Throttle Sensor Voltage	V	Output value of the throttle position sensor. Input value to the engine control module.	
20	Diff. Press. Sen. Vol.	V	Output value of the pressure difference sensor detecting the difference between primary and secondary charging pressure.	This item is applied only to twin turbo model.
21	Fuel Injection #1 Pulse	ms	Control value for the fuel injection period from the engine control module (bank 1).	
22	Fuel Injection #2 Pulse	ms	Control value for the fuel injection period from the engine control module (bank 2).	
23	Knocking Correction	deg	Retard amount when knocking has occurred. Partial learned value of the learned ignition timing.	
24	Atmosphere Pressure	kPa mmHg inHg psig	Atmospheric pressure calculated from the output value of the atmospheric pressure sensor.	
25	Mani. Relative Pressure	kPa mmHg inHg psig	Value of manifold absolute pressure minus atmosphere pressure. [Manifold absolute pressure - Atmosphere pressure]	
26	Pressure Diff. Sensor	kPa mmHg inHg psig	Pressure difference calculated by subtracting the pressure difference between primary and secondary charging pressure from the detected output value of the pressure difference sensor. Differential pressure = (Secondary pressure) - (Primary pressure)	This item is applied only to twin turbo model.



No.	Items	Unit of measure	Contents	Remarks
27	Fuel Tank Pressure	kPa mmHg inHg psig	Pressure in the fuel tank. Pressure calculated from the output value of the fuel tank pressure sensor.	This item is applied only to North American models.
28	CO Adjustment	V	The front O2 sensor cannot be used in areas using leaded gasoline. As this causes open control, the correction value has been established to provide central control as far as possible for the initial air-fuel ratio. Adjustment can be made while confirming the CO value.	
29	Learned Ignition Timinig	deg	Advance or retard amount when knocking has occurred. (Learned ignition timing)	
30	Accel. Opening Angle	%	Accelerator pedal opening angle ratio calculated from the output value of the accelerator position sensor.	
31	Fuel Temp.	°C °F	Fuel temperature calculated from the output value of the fuel temperature sensor.	This item is applied only to North American models.
32	Front O2 Heater #1	A	Current value of the front O2 sensor heater. Control value of the engine control module.	
33	Rear O2 Heater Current	A	Current value of the rear O2 sensor heater. Control value of the engine control module.	
34	Front O2 Heater #2	A	Current value of the front O2 sensor heater. Control value of the engine control module.	
35	Fuel Level	V	Output value of the fuel level sensor. Engine control module input value. Total value of main and sub.	
36	Radiator Fan Control	%	Radiator fan control duty ratio. Control of the radiator fan control unit. Output value of the engine control module.	This item is applied only to H6 model.
37	Primary Control	%	Primary charging pressure control signal. Control duty ratio of the charging pressure control solenoid valve. Output value of the engine control module.	This item is applied only to turbo model.



No.	Items	Unit of measure	Contents	Remarks
38	Secondary Control	%	Secondary charging pressure control signal. Control duty ratio of the charging pressure control solenoid valve. Output value of the engine control module.	This item is applied only to turbo model.
39	CPC Valve Duty Ratio	%	CPC valve control duty ratio. Output value of the engine control module.	
40	TGV Position Sensor R	V	Output value of the TGV position sensor RH. Engine control module input value.	
41	TGV Position Sensor L	V	Output value of the TGV position sensor LH. Engine control module input value.	
42	ISC Valve Duty Ratio	%	ISC valve control duty ratio. Output value of the engine control module.	
43	A/F Lean Correction	%	Sometimes the air-fuel ratio intentionally is controlled offset from the theoretical fuel-air ratio (lean burn control etc.). Correction value at this time.	
44	A/F Heater Duty	%	Front O2 sensor heater control duty ratio. Output value of the engine control module.	
45	ISC Valve Step	STEP	ISC valve step number. Stepping motor step number. Output value of the engine control module.	
46	No. of EGR steps	STEP	EGR valve step number. Stepping motor step number. Output value of the engine control module.	
47	ALT Duty	%	Alternator control duty ratio. Output value of the engine control module.	
48	Fuel Pump Duty	%	Fuel pump control duty ratio. The duty ratios for control are 0%, 33%, 66%, and 100%. Output value of the engine control module.	
49	VVT Adv. Ang. Amount R	deg	Intake VVT advance amount (bank 1)	
50	VVT Adv. Ang. Amount L	deg	Intake VVT advance amount (bank 2)	
51	OCV Duty R	%	OCV control duty ratio (bank 1). Output value of the engine control module.	
52	OCV Duty L	%	OCV control duty ratio (bank 2). Output value of the engine control module.	



No.	Items	Unit of measure	Contents	Remarks
53	OCV Current R	mA	OCV actual current value (bank 1). Engine control module input value.	
54	OCV Current L	mA	OCV actual current value (bank 2). Engine control module input value.	
55	A/F Sensor #1 Current	mA	Output current value of the front A/F sensor (bank 1). Engine control module input value.	
56	A/F Sensor #2 Current	mA	Output current value of the front A/F sensor (bank 2). Engine control module input value.	
57	A/F Sensor #1 Resistance	ohm	Resistance value of the front A/F sensor calculated from the output value of the front A/F sensor (bank 1)	
58	A/F Sensor #2 Resistance	ohm	Resistance value of the front A/F sensor calculated from the output value of the front A/F sensor (bank 2)	
59	A/F Sensor #1	—	Actual lambda value calculated from the output value of the front A/F sensor (bank 1)	
60	A/F Sensor #2	—	Actual lambda value calculated from the output value of the front A/F sensor (bank 2)	
61	A/F Correction #3	%	Sub-correction value for the A/F feedback control.	
62	A/F Learning #3	%	Sub-learned value for the A/F feedback control.	
63	Rear O2 Heater Voltage	V	Voltage value of the rear O2 sensor heater. Output value of the engine control module.	
64	A/F Adjust Voltage	V	Value for detecting a front A/F sensor variation. Engine control module input value.	
65	Gear Position	st	Present gear position. Input value from the transmission control module.	
66	A/F Heater Current 1	A	Current value of the front A/F sensor heater (bank 1). Engine control module input value.	
67	A/F Heater Current 2	A	Current value of the front A/F sensor heater (bank 2). Engine control module input value.	



No.	Items	Unit of measure	Contents	Remarks
68	SUBARU Intelligent Drive mode	I/S/S#	Indication of the present "SUBARU Intelligent Drive" setting.	
69	Throttle sensor closed V	V	Voltage value for the fully closed position of the main throttle position sensor. Fully closed position learning.	
70	Throttle Motor Duty	%	Throttle motor control duty ratio. Output value of the engine control module.	
71	Throttle Motor Voltage	V	Throttle motor power supply voltage. Engine control module input value.	
72	Sub-Throttle Sensor	V	Voltage value of the sub-throttle position sensor. Engine control module input value.	
73	Main-Throttle Sensor	V	Voltage value of the main throttle position sensor. Engine control module input value.	
74	Sub-Accelerator Sensor	V	Voltage value of the sub accelerator pedal position sensor. Engine control module input value.	
75	Main-Accelerator Sensor	V	Voltage value of the main accelerator pedal position sensor. Engine control module input value.	
76	Fuel Pressure	kPa	Fuel pressure. Control value of the engine control module.	
77	Exhaust Gas Temperature	°C °F	Exhaust gas temperature calculated from the output value of the exhaust temperature sensor.	
78	Exhaust Gas Temp. 2	°C °F	Not used	
79	Sec. Air Piping Pressure	kPa mmHg inHg psig	Secondary air piping pressure. Engine control module input value.	
80	Sec. Air Flow	g/s lb/m	Secondary mass air flow calculated from the secondary air piping pressure.	
81	Memorized Cruise Speed	km/h MPH	Target vehicle speed of the cruise control system (set vehicle speed).	
82	A/F Correction #4	%	Sub-correction value for A/F feedback control (bank 2).	
83	A/F Learning #4	%	Sub-learned value for A/F feedback control (bank 2).	



No.	Items	Unit of measure	Contents	Remarks
84	Fuel level resistance	ohm	Resistance value of the fuel level sensor. Engine control module input value.	
85	Odometer	km	Estimated odometer	
86	Fuel tank air presser	MPa	Used for evaporative system diagnosis. Measuring of the pressure in the fuel tank.	This item is applied only to North American models.
87	Oil Temperature	°C °F	Oil temperature of the VVL system. Value calculated from the output value of the oil temperature sensor.	
88	OSV Duty R	%	OSV control duty ratio (bank 1). Output value of the engine control module.	
89	OSV Duty L	%	OSV control duty ratio (bank 2). Output value of the engine control module.	
90	OSV Current R	mA	OSV target current value (bank 1). Output value of the engine control module.	
91	OSV Current L	mA	OSV target current value (bank 2). Output value of the engine control module.	
92	Exh. VVT Retard Ang. R	deg	Exhaust VVT retard amount (bank 1).	
93	Exh. VVT Retard Ang. L	deg	Exhaust VVT retard amount (bank 2).	
94	Exh. OCV Duty R	%	Exhaust OCV control duty ratio (bank 1). Output value of the engine control module.	
95	Exh. OCV Duty L	%	Exhaust OCV control duty ratio (bank 2). Output value of the engine control module.	
96	Exh. OCV Current R	mA	Exhaust OCV current value (bank 1). Output value of the engine control module.	
97	Exh. OCV Current L	mA	Exhaust OCV current value (bank 2). Output value of the engine control module.	
98	VVL Lift Mode	—	Display of the VVL control mode.	
99	Roughness Monitor #1	—	Count value of roughness monitor #1.	
100	Roughness Monitor #2	—	Count value of roughness monitor #2.	



No.	Items	Unit of measure	Contents	Remarks
101	Roughness Monitor #3	—	Count value of roughness monitor #3.	
102	Roughness Monitor #4	—	Count value of roughness monitor #4.	
103	Roughness Monitor #5	—	Count value of roughness monitor #5.	
104	Roughness Monitor #6	—	Count value of roughness monitor #6.	
105	Learned IGN Time Correct	—	Value of only the whole learning value in the ignition timing learning value.	
106	Main Injection Period	°CA	Controlled value of the main injection period by engine control module.	This item is applied only to Diesel models.
107	Final Injection Amount	mm3/st	Total injection amount of multiple injections.	This item is applied only to Diesel models.
108	Number of Times Injected	—	Number of times injected which corresponds to running conditions. (this excludes “After-injection” and “Post-injection”)	This item is applied only to Diesel models.
109	Target Intake Manifold Pressure	kPa	Target intake manifold pressure of engine control module.	This item is applied only to Diesel models.
110	Target Intake Air Amount	mg/cyl	Target intake air amount of engine control module.	This item is applied only to Diesel models.
111	Mass Air Flow	mg/cyl	Intake air amount calculated from the output value of air flow sensor.	This item is applied only to Diesel models.
112	Target EGR Valve Opening Angle	deg	Target EGR valve opening angle of engine control module.	This item is applied only to Diesel models.
113	EGR Valve Opening Angle	deg	EGR valve opening angle calculated from the output of EGR valve opening angle sensor.	This item is applied only to Diesel models.
114	EGR Duty	%	EGR valve control duty ratio. Output value of engine control module.	This item is applied only to Diesel models.
115	Target Common Rail Pressure	MPa	Target common rail pressure of engine control module.	This item is applied only to Diesel models.
116	Common rail pressure	MPa	Pressure within common rail calculated from the output value of common rail pressure sensor. Value not renewed while engine is not running.	This item is applied only to Diesel models.
117	Intake Air Temperature	°C °F	Intake air temperature calculated from the output value of airflow and intake air temperature sensor.	This item is applied only to Diesel models.



No.	Items	Unit of measure	Contents	Remarks
118	Target engine speed	rpm	Target engine speed of engine control module.	This item is applied only to Diesel models.
119	Boost Pressure Feedback	%	Opening angle corrected in response to feedback from boost control valve.	This item is applied only to Diesel models.
120	Electric Power Steering Current Value	A	Current value of electric power steering. Input value from power steering control module to engine control module.	This item is applied only to Diesel models.
121	Target Fuel Pump Current	mA	Target current value of suction control valve. Value calculated by engine control module.	This item is applied only to Diesel models.
122	Actual Fuel Pump Current	mA	Actual current value of suction control valve. Input value to engine control module.	This item is applied only to Diesel models.
123	Mileage after Injector Learning	km mile	Mileage after performing injection amount learning for fuel injector.	This item is applied only to Diesel models.
124	Mileage after Injector Learning	km mile	Mileage after replacing fuel injectors and performing injection amount learning with SSMIII for the new injector.	This item is applied only to Diesel models.
125	Interior heater	Step	Number of active PTC heaters 0 = all heaters OFF, 1 = 1 heater ON, 2 = 2 heaters ON	This item is applied only to Diesel models.
126	Cylinder #1 quantity correction value	ms	Value of injection amount corrected for cylinder #1. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
127	Cylinder #2 quantity correction value	ms	Value of injection amount corrected for cylinder #2. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.



No.	Items	Unit of measure	Contents	Remarks
128	Cylinder #3 quantity correction value	ms	Value of injection amount corrected for cylinder #3. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
129	Cylinder #4 quantity correction value	ms	Value of injection amount corrected for cylinder #4. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
130	Battery Current Value	A	Current value emitted from Battery Current/Temperature Sensor. Input value to engine control module. NOTE: Negative (-) value shows discharging status Positive (+) value shows charging status	
131	Battery Temperature	°C °F	Battery temperature, calculated with output value from Battery. Current/Temperature Sensor.	
132	Alternator Control Mode	High Mid Low	Generation control status of alternator, calculated by engine control module.	
133	AT Vehicle ID Signal	ON/OFF	Signal for identification of the transmission type (AT or MT). "ON" at the time of AT.	
134	Test Mode Signal	ON/OFF	Display of the connection status of the delivery mode fuse (test mode connector). "ON" at the time of connection.	
135	Read Memory Signal	ON/OFF	Display of the connection status of the read memory connector. "ON" when connected.	
136	D-check Require Flag	ON/OFF	Turns into ON if it is requested to operate solenoid compulsory drive and compulsory adjustment function for engine speed and A/F.	



No.	Items	Unit of measure	Contents	Remarks
137	Delivery Mode Connector (Test Mode Connector)	ON/OFF	Display of the connection status of the delivery mode fuse (test mode connector). ON with connected status. Engine control module input value.	
138	Clear Memory Terminal	ON/OFF	Display of the connection status of the clear memory connector. "ON" with connected status. Engine control module input value.	
139	Neutral Position Switch	ON/OFF	Neutral position switch signal. Becomes ON when MT is in neutral or when AT is in "P" range or "N" range. Engine control module input value.	
140	Idle Switch Signal	ON/OFF	Idling signal. Becomes ON at the time of idling.	
141	Int'cool auto washer SW	ON/OFF	Intercooler water spray auto switch signal. Becomes ON when the auto switch is ON. Engine control module input value.	
142	Ignition Switch	ON/OFF	Ignition switch signal. Becomes ON when the ignition switch is ON.	
143	P/S Switch	ON/OFF	Power steering switch signal. Becomes ON at the time of steering operation. Engine control module input value.	
144	A/C Switch	ON/OFF	A/C switch signal. Becomes ON when the A/C switch on the heater control is ON. Engine control module input value.	
145	Handle Switch	Low Input/High Input	Steering wheel switch signal. As the accelerator pedal stroke is different left and right in case of ETC, this has been provided so that the engine control module can identify whether the steering wheel is on the left or the right. "Low Input" in case of RH drive.  NOTE: As for the vehicle since 09MY, the steering wheel installation position displayed in SSMIII might be not corresponding to an actual steering wheel installation position.	
146	Starter Switch	ON/OFF	Starter switch signal. Becomes ON when the starter is ON. Engine control module input value.	



No.	Items	Unit of measure	Contents	Remarks
147	Front O2 #1 Rich Signal	ON/OFF	Front O2 sensor output monitor (bank 1). Becomes ON at the time of rich.	
148	Rear O2 Rich Signal	ON/OFF	Rear O2 sensor output monitor. Becomes ON at the time of rich.	
149	Front O2 #2 Rich Signal	ON/OFF	Front O2 sensor output monitor (bank 2). Becomes ON at the time of rich.	
150	Knocking Signal	ON/OFF	Judgment of knocking occurrence from the knocking sensor output signal. "ON" at the time of knocking occurrence.	
151	Knocking #2 Signal	ON/OFF	Judgment of knocking occurrence from the knocking sensor output signal. "ON" at the time of knocking occurrence. (bank 2)	
152	Electric Load Signal	ON/OFF	Electric load signal. "ON" when there was an electric load. Engine control module input value.	
153	Crankshaft Position Sig.	ON/OFF	Output signal of the crankshaft position sensor. Turns into "ON" while the engine is running. Engine control module input signal.	
154	Camshaft Position Sig.	ON/OFF	Output signal of the camshaft position sensor. Turns into "ON" while the engine is running. Engine control module input signal.	
155	Rear Defogger SW	ON/OFF	Rear defogger switch input signal. Becomes ON when the switch is ON. Engine control module input value.	
156	Blower Fan SW	ON/OFF	Blower fan switch input signal. Becomes ON when the switch is ON. Engine control module input value.	
157	Light Switch	ON/OFF	Light switch input signal. Becomes ON when the switch is ON. Engine control module input value.	
158	Wiper Switch	ON/OFF	Wiper switch input signal. Becomes ON when the switch is ON. Engine control module input value.	
159	A/C Lock Signal	ON/OFF	A/C compressor lock fault signal. Becomes ON in case of a compressor lock fault. Engine control module input value.	



No.	Items	Unit of measure	Contents	Remarks
160	A/C Mid Pressure Switch	ON/OFF	A/C mid-pressure switch signal. Becomes ON when the switch is ON. Engine control module input value.	
161	A/C Compressor Signal	ON/OFF	A/C compressor drive signal. Becomes ON at the time of drive signal output. Output value of the engine control module.	
162	Radiator Fan Relay #3	ON/OFF	Not used	
163	Radiator Fan Relay #1	ON/OFF	Radiator fan relay drive signal. Becomes ON at the time of drive signal output. Output value of the engine control module.	
164	Radiator Fan Relay #2	ON/OFF	Radiator fan relay drive signal. Becomes ON at the time of drive signal output. Output value of the engine control module.	
165	Fuel Pump Relay	ON/OFF	Fuel pump relay drive signal. Becomes ON at the time of drive signal output. Output value of the engine control module.	
166	Int'cool auto washer relay	ON/OFF	Intercooler water spray relay drive signal. Becomes ON at the time of drive signal output. Output value of the engine control module.	
167	CPC Solenoid Valve	ON/OFF	Purge control solenoid valve drive signal. Becomes ON at the time of drive signal output. Output value of the engine control module.	
168	Blow-by leak Connector	ON/OFF	Detection of disconnection of blow-by hoses.	This item is applied only to turbo model for North America.
169	PCV Solenoid Valve	ON/OFF	Pressure control solenoid valve drive signal. Becomes ON at the time of drive signal output. Output value of the engine control module.	This item is applied only to North American models.
170	TGV Output	ON/OFF	Drive signal to the TGV motor. Becomes ON at the time of TGV operation (When duty output is above 0%). Output value of the engine control module.	
171	TGV Drive	Open/Close	Display of the TGV drive status. Becomes "Open" at the time of TGV open status. Engine control module control status.	



No.	Items	Unit of measure	Contents	Remarks
172	Variable Intake Air Sol.	ON/OFF	Drive signal to the variable intake air solenoid. Becomes ON at the time of drive signal output. Output value of the engine control module.	
173	Pressure Sources Change	ON/OFF	Solenoid used for atmosphere pressure detection with the absolute pressure sensor. When ON, the absolute pressure sensor detects atmosphere pressure.	
174	Vent. Solenoid Valve	ON/OFF	Drive signal to the drain valve. Becomes ON at the time of valve drive. Output value of the engine control module.	This item is applied only to North American models. Atmosphere open when the valve is OFF.
175	P/S Solenoid Valve	ON/OFF	Drive signal to the solenoid used when the intake air mass is increased at the time of power steering ON. Intake air mass increase when power steering is ON.	
176	Assist Air Sol. Valve	ON/OFF	Drive signal to the air assist injector solenoid valve. Becomes ON at the time of valve drive. Output value of the engine control module.	This item is applied only to North American models.
177	Tank Sensor Cntl Valve	ON/OFF	Drive signal to the tank sensor control valve. Becomes ON at the time of solenoid valve drive. Output value of the engine control module.	
178	Relief Valve Solenoid 1	ON/OFF	Drive signal to the relief valve solenoid valve 1 for twin turbocharger system control. Becomes ON at the time of solenoid valve drive. Output value of the engine control module.	This item is applied only to twin turbo model.
179	Relief Valve Solenoid 2	ON/OFF	Drive signal to the relief valve solenoid valve 2 for twin turbocharger system control. Becomes ON at the time of solenoid valve drive. Output value of the engine control module.	This item is applied only to twin turbo model.
180	TCS Relief Valve Sol.	ON/OFF	Drive signal to the charging pressure solenoid valve at the time of VDC operation. Becomes ON at the time of solenoid valve drive. Output value of the engine control module.	



No.	Items	Unit of measure	Contents	Remarks
181	Ex. Gas Pos. Pressure	ON/OFF	Drive signal to the exhaust gas positive pressure valve for twin turbo-charger system control. Becomes ON at the time of solenoid valve drive. Output value of the engine control module.	This item is applied only to twin turbo model.
182	Ex. Gas Neg. Pressure	ON/OFF	Drive signal to the exhaust gas negative pressure valve for twin turbo-charger system control. Becomes ON at the time of solenoid valve drive. Output value of the engine control module.	This item is applied only to twin turbo model.
183	Intake Air Solenoid	ON/OFF	Drive signal to the intake air solenoid valve for twin turbocharger system control. Becomes ON at the time of solenoid valve drive. Output value of the engine control module.	This item is applied only to twin turbo model.
184	Muffler control	ON/OFF	Signal for variable muffler control. Becomes ON at the time of muffler open mode. Output value of the engine control module.	
185	Exhaust By-pass valve	ON/OFF	Not used	
186	Eng. Oil Press. SW 1	ON/OFF	Drive signal to the VVL oil pressure switch RH for diagnosis. Becomes ON when the pressure switch is ON. Output value of the engine control module.	
187	Eng. Oil Press. SW 2	ON/OFF	Drive signal to the VVL oil pressure switch LH for diagnosis. Becomes ON when the pressure switch is ON. Output value of the engine control module.	
188	CPC Solenoid 2	ON/OFF	Purge control solenoid valve 2 drive signal. Becomes ON at the time of drive signal output. Output value of the engine control module.	
189	Retard Signal from AT	ON/OFF	Signal requesting the retard transmitted from the transmission control module. Becomes ON when the request signal has been transmitted. Engine control module input value.	
190	Fuel Cut signal from AT	ON/OFF	Signal requesting fuel cut transmitted from the transmission control module. Becomes ON when the request signal has been transmitted. Engine control module input value.	



No.	Items	Unit of measure	Contents	Remarks
191	Ban of Torque Down	ON/OFF	Signal notifying torque-down prohibition in regard to the VDC control module. Becomes ON at the time of prohibition signal output. Output value of the engine control module.	
192	Request Torque Down VDC	ON/OFF	Signal requesting torque-down transmitted from the VDC control module. Becomes ON when the request signal has been transmitted. Engine control module input value.	
193	Torque Control Signal #1	ON/OFF	Ignition timing retard and fuel cut control is performed by combination of #1 and #2, and torque-down is executed	
194	Torque Control Signal #2	ON/OFF	Same as # 1	
195	Torque Permission Signal	ON/OFF	Signal notifying torque-down permission in regard to the transmission control module. Becomes ON at the time of allowance signal output. Output value of the engine control module.	
196	EAM Signal	Low/High	Signal notifying torque-down permission in regard to the transmission control system control module. Becomes "Low" at the time of prohibition signal output. Output value of the engine control module.	
197	AT coop. Lock up sig.	ON/OFF	Display of the AT lock-up status. Becomes ON with lock-up status.	
198	AT coop. Lean burn sig.	ON/OFF	Becomes ON at the time of lean burn control execution for a lean burn model. Output value of the engine control module.	
199	AT coop. Rich spike sig.	ON/OFF	Becomes ON at the time of rich spike output for a lean burn model. Output value of the engine control module.	
200	AET Signal	Low/High	Torque-down request signal from the transmission control module. Becomes "Low" at the time of request signal input.	
201	Kick Down Switch	ON/OFF	Input value from the kick-down switch. At present, these data are not used.	



No.	Items	Unit of measure	Contents	Remarks
202	Economy Switch	ON/OFF	Input value from the economy switch. Becomes ON when the economy switch is ON. (However, CAN input)	This item is applied only to Japanese models.
203	Idle Switch	ON/OFF	Idling signal. ON at the time of idling.	
204	ETC Motor Relay	ON/OFF	Drive signal to the ETC motor relay. Becomes ON at the time of drive signal output. Output value of the engine control module.	
205	Injector Driver Relay	ON/OFF	Drive signal to the injector driver relay. Becomes ON at the time of drive signal output. Output value of the engine control module.	This item is applied only to CNG model.
206	Clutch Switch	ON/OFF	Clutch switch signal. Becomes ON when the clutch pedal is depressed. Engine control module input value.	
207	Stop Light Switch	ON/OFF	Stop light switch signal. Becomes ON when the stop light lights. Engine control module input value.	
208	SET/COAST Switch	ON/OFF	SET/COAST switch signal of the cruise control system. Becomes ON at the time of switch operation. Engine control module input value.	
209	RESUME/ACCEL Switch	ON/OFF	RESUME/ACCEL switch signal of the cruise control system. Becomes ON at the time of switch operation. Engine control module input value.	
210	Brake Switch	ON/OFF	Brake switch signal. Becomes ON when the brake pedal is depressed. Engine control module input value.	For vehicle model without Cruise control system, "Stop Light Switch" and "Brake Switch" value displayed at [Current Data Display] will not change.
211	Inhibitor Switch	ON/OFF	Inhibitor switch signal. Becomes ON at the time of "P" range or "N" range. Engine control module input value.	
212	Main Switch	ON/OFF	Main switch signal of the cruise control system. Becomes ON at the time of switch operation. Engine control module input value.	
213	Body Int. Unit Data	OFF/ON	Status of CAN data reception from the body integrated unit. Display whether received any data.	



No.	Items	Unit of measure	Contents	Remarks
214	Body Int. Unit Count	OFF/ON	Update status for the CAN data from the body integrated unit. Display whether the counters being transmitted are updated sequentially or not.	
215	Sec. Air Combi V Relay 2	ON/OFF	Secondary air combination valve relay 2 drive signal. Becomes ON at the time of drive signal output. Output value of the engine control module.	
216	Sec. Air Pump Relay	ON/OFF	Secondary air pump relay drive signal. Becomes ON at the time of drive signal output. Output value of the engine control module.	
217	Sec. Air Combi V Relay 1	ON/OFF	Secondary air combination valve relay 1 drive signal. Becomes ON at the time of drive signal output. Output value of the engine control module.	
218	distance change SW	ON/OFF	Display of the ON/OFF status of the vehicle distance setting switch used by the ADA cruise control.	This item is applied only to Japanese models.
219	CC Cancel SW	ON/OFF	Signal of the cruise control cancel switch of the cruise control system. Becomes ON at the time of switch operation. Engine control module input value.	
220	MIL On Flag	ON/OFF	Lighting indication of the malfunction indicator light.	
221	Fuel Pressure Switching Solenoid	ON/OFF	Driving signal to Fuel Pressure Switching Solenoid. "ON" shows Solenoid Valve is now driven. Output value from engine control module.	
222	Oil Level Switch	High level/Low level	Signal from Oil Level Switch. "Low level" shows decreased oil amount. Input value to engine control module.	
223	TGV Position SW1	Close/Open	Output value of the TGV position sensor SW1 signal. Becomes "Close" at the time of TGV is closing. Engine control module input value.	
224	TGV Position SW2	Close/Open	Output value of the TGV position sensor SW2 signal. Becomes "Close" at the time of TGV is closing. Engine control module input value.	



No.	Items	Unit of measure	Contents	Remarks
225	ELCM switching valve	Close/Open	ELCM switching valve drive signal. Becomes "Close" at the time of switching valve is closing. Output value of the engine control module.	
226	ELCM pump	ON/OFF	ELCM pump drive signal. Becomes "ON" at the time of ELCM pressure pump is driving. Output value of the engine control module.	
227	Boost Pressure Control Mode	Feedback/Open	Mode to control boost pressure. Turn to "Feedback" during feedback control.	This item is applied only to Diesel models.
228	EGR Control Mode	Feedback/Open	Mode to control EGR. Turn to "Feedback" during feedback control.	This item is applied only to Diesel models.
229	Glow Relay	ON/OFF	Operating signal of glow relay. It becomes ON when glow relay is in operation. Output value of engine control module.	This item is applied only to Diesel models.
230	Swirl Control Valve	Close/Open	Driving signal to Swirl Control Valve. Output value from engine control module.	This item is applied only to Diesel models.
231	Sub Fuel Pump Relay	ON/OFF	Operating signal of sub fuel pump. It becomes ON when sub fuel pump is in operation. Output value of engine control module.	This item is applied only to Diesel models.
232	Compressor ON Request	ON/OFF	Demanding signal for A/C compressor ON, emitted from A/C control unit. Input value to engine control module.	This item is applied only to Diesel models.
233	Fuel Pump Learning	incomplete/completed	Process of fuel pump leaning	This item is applied only to Diesel models.
234	Injector Learning	incomplete/completed	Process of injection amount learning for fuel injector.	This item is applied only to Diesel models.
235	EGR Learning	incomplete/completed	Process of EGR learning.	This item is applied only to Diesel models.
236	Fuel Cut Request	With Request/ Without Request	Fuel cut request calculated by engine control module.	This item is applied only to Diesel models.
237	Fuel Pump Mode	Feedback/Open	Mode to control fuel pump. Turn to "Feedback" during feedback control.	This item is applied only to Diesel models.
238	Clutch Switch for Smart	ON/OFF	Clutch switch for starting vehicles equipped with Keyless Access with Push Button Start. It becomes ON once clutch pedal is depressed. Input value to engine control module.	



No.	Items	Unit of measure	Contents	Remarks
239	DPF Regeneration	Regeneration in progress/Regeneration not in progress	Mode display of DPF regeneration process. "Regeneration in progress" shows burning process at DPF is now progressed to decrease soot deposition at DPF.	This item is applied only to Diesel models.
240	Cumulative Ash Amount	g	Amount of ash (additives to engine oil) deposited at DPF, calculated by engine control module.	This item is applied only to Diesel models.
241	Deviation Between DPF Inlet and Outlet Pressure	kPa	Pressure difference, calculated with output value from DPF Pressure Difference Sensor.	This item is applied only to Diesel models.
242	Exhaust Gas Temperature at Catalyst Inlet	°C °F	Exhaust gas temperature, calculated with output value from Exhaust Gas Temperature Sensor 1.	This item is applied only to Diesel models.
243	Exhaust Gas Temperature at DPF Inlet	°C °F	Exhaust gas temperature, calculated with output value from Exhaust Gas Temperature Sensor 2.	This item is applied only to Diesel models.
244	Estimated Catalyst Temperature	°C °F	Estimated temperature at internal catalytic converter, calculated by engine control module.	This item is applied only to Diesel models.
245	Estimated DPF Temperature	°C °F	Estimated temperature at DPF, calculated by engine control module.	This item is applied only to Diesel models.
246	Soot Accumulation Ratio	%	Soot accumulation ratio at DPF, calculated by engine control module.	This item is applied only to Diesel models.
247	Oil Dilution Ratio	%	Engine oil dilution ratio, calculated by engine control module.	This item is applied only to Diesel models.
248	Accumulated count of over-rev instance (very high RPM)	Times	Number of recorded over-revolution instances singly harmful to engine to date.	This item is applied only to Diesel models.
249	Accumulated count of over-rev instance (high RPM)	Times	Number of recorded over-revolution instances which its repetition is harmful to engine to date.	This item is applied only to Diesel models.
250	Real common rail pressure (time synchronous)	Mpa	Pressure within common rail calculated from the output value of common rail pressure sensor. Value renewed even while engine is not running but ignition switch is on.	This item is applied only to Diesel models.
251	Estimated distance to oil change	km	Estimated operating distance until next engine oil replace.	This item is applied only to Diesel models.
252	Running distance after last regeneration	km	Operating distance since the last DPF regeneration.	This item is applied only to Diesel models.
253	DPF regeneration counts	Times	Total number of DPF regenerations for the vehicle since purchase.	This item is applied only to Diesel models.



No.	Items	Unit of measure	Contents	Remarks
254	Marginal Q (quantity) Final learning Value1_ 1	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #1) at the first (lowest) of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
255	Marginal Q (quantity) Final learning Value1_ 2	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #2) at the first (lowest) of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
256	Marginal Q (quantity) Final learning Value1_ 3	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #3) at the first (lowest) of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
257	Marginal Q (quantity) Final learning Value1_ 4	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #4) at the first (lowest) of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.



No.	Items	Unit of measure	Contents	Remarks
258	Marginal Q (quantity) Final learning Value2_ 1	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #1) at the second of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
259	Marginal Q (quantity) Final learning Value2_ 2	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #2) at the second of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
260	Marginal Q (quantity) Final learning Value2_ 3	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #3) at the second of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
261	Marginal Q (quantity) Final learning Value2_ 4	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #4) at the second of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.



No.	Items	Unit of measure	Contents	Remarks
262	Marginal Q (quantity) Final learning Value3_ 1	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #1) at the third of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
263	Marginal Q (quantity) Final learning Value3_ 2	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #2) at the third of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
264	Marginal Q (quantity) Final learning Value3_ 3	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #3) at the third of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
265	Marginal Q (quantity) Final learning Value3_ 4	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #4) at the third of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.



No.	Items	Unit of measure	Contents	Remarks
266	Marginal Q (quantity) Final learning Value4_1	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #1) at the fourth of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
267	Marginal Q (quantity) Final learning Value4_2	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #2) at the fourth of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
268	Marginal Q (quantity) Final learning Value4_3	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #3) at the fourth of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
269	Marginal Q (quantity) Final learning Value4_4	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #4) at the fourth of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.



No.	Items	Unit of measure	Contents	Remarks
270	Marginal Q (quantity) Final learning Value5_ 1	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #1) at the fifth (highest) of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
271	Marginal Q (quantity) Final learning Value5_ 2	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #2) at the fifth (highest) of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
272	Marginal Q (quantity) Final learning Value5_ 3	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #3) at the fifth (highest) of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
273	Marginal Q (quantity) Final learning Value5_ 4	ms	Injector marginal quantity learning value for reducing toxic exhaust gas and combustion noise (Cylinder #4) at the fifth (highest) of the five fuel pressure levels during learning. NOTE: If there is a cylinder whose change in engine speed is large, the amount of correction of fuel injection to the cylinder is controlled to reduce the change in engine speed.	This item is applied only to Diesel models.
274	Individual Pump Difference Learning Memory Value	mA	Learning value for the fuel pump drive current.	This item is applied only to Diesel models.
275	Final Main Injection period	ms	Injector drive time during main injection.	This item is applied only to Diesel models.



## Transmission

No.	Items	Unit of measure	Contents	Remarks
1	Engine Speed	rpm	Engine speed signal transmitted from the engine control module. Calculated from the crankshaft position sensor signal. Transmission control module input value.	
2	Battery Voltage	V	Battery voltage. Transmission control module input value.	
3	Air Flow Sensor Voltage	V	Mass air flow sensor output value transmitted from the engine control module. Transmission control module input value.	
4	Throttle Sensor Voltage	V	Output value of the throttle position sensor. Transmission control module input value.	
5	Accel. Opening Angle	%	Accelerator pedal opening angle ratio transmitted from the engine control module. Value calculated from the accelerator pedal position sensor. Transmission control module input value.	
6	Front Wheel Speed	km/h MPH	Front wheel speed calculated from the front vehicle speed sensor.	
7	ATF Temp.	°C °F	Value calculated from the ATF temperature sensor. ATF temperature of the oil pan part.	
8	Gear Position	st	Current gear position. Indication of the gear position before shifting at the time of shifting and the current gear position when not shifting.	
9	Line Pressure Duty Ratio	%	Line pressure solenoid control duty ratio. Transmission control module output value.	
10	Lock Up Duty Ratio	%	Lock-up duty solenoid control duty ratio. Transmission control module output value.	
11	Transfer Duty Ratio	%	Transfer duty solenoid control duty ratio. Transmission control module output value.	
12	Throttle Sensor Power	V	Throttle position sensor power supply voltage. Transmission control module output value.	



No.	Items	Unit of measure	Contents	Remarks
13	Turbine Revolution Speed	rpm	In case of 4AT: Input shaft speed calculated from the torque converter turbine speed sensor signal. In case of 5AT: Input shaft speed calculated from the signals of torque converter turbine speed sensor 1 and torque converter turbine speed sensor 2.	
14	Brake Clutch Duty Ratio	%	2-4 Brake duty solenoid control duty ratio. Transmission control module output value.	
15	Rear Wheel Speed	km/h MPH	Rear wheel speed calculated from the rear vehicle speed sensor.	
16	Mani.Pressure Voltage	V	Manifold absolute pressure sensor output value transmitted from the engine control module. Transmission control module input value.	
17	Lateral G Sensor	V	Output value of lateral G sensor or yaw rate & lateral G sensor. Transmission control module input value.	
18	Low Clutch Duty	%	Low clutch duty solenoid control duty ratio. Transmission control module output value.	
19	High Clutch Duty	%	High clutch duty solenoid control duty ratio. Transmission control module output value.	
20	L&R B Duty	%	Low & reverse duty solenoid control duty ratio. Transmission control module output value.	
21	ATF Temperature 2	°C °F	Value calculated from the ATF temperature sensor 2 output. ATF temperature at the torque converter outlet.	
22	Voltage C-diff. SW	V	Output value of the DCCD volume. The output value changes according to the dial position. DCCD control module input value.	This item is applied only to vehicle equipped with DCCD.
23	AT Turbine Speed 1	rpm	Value calculated from the signal of torque converter turbine speed sensor 1. Indication of the front sun gear speed.	
24	AT Turbine Speed 2	rpm	Value calculated from the signal of torque converter turbine speed sensor 2. Indication of the front planetary carrier speed.	



No.	Items	Unit of measure	Contents	Remarks
25	C-Diff. Real Current	A	Actual current value of the transfer coil performing LSD torque control. DCCD control module output value.	This item is applied only to vehicle equipped with DCCD.
26	C-Diff. Indicate Current	A	Indicated current value of the transfer coil performing LSD torque control, calculated by the DCCD control module.	This item is applied only to vehicle equipped with DCCD.
27	SUBARU Intelligent Drive Mode	I / S/ S#	Indication of the present "SUBARU Intelligent Drive" setting.	
28	Sub-Accelerator Sensor	V	Sub accelerator pedal position sensor output value transmitted from the engine control module. Transmission control module input value.	
29	H&LR/C Solenoid Current	A	High & low reverse clutch solenoid actual current value. Transmission control module output value.	
30	D/C Solenoid Current	A	Direct clutch solenoid actual current value. Transmission control module output value.	
31	F/B Solenoid Current	A	Front brake solenoid actual current value. Transmission control module output value.	
32	I/C Solenoid Current	A	Input clutch solenoid actual current value. Transmission control module output value.	
33	P/L Solenoid Current	A	Line pressure solenoid actual current value. Transmission control module output value.	
34	L/U Solenoid Current	A	Lock-up solenoid actual current value. Transmission control module output value.	
35	AWD Sol. Current	A	Transfer solenoid actual current value. Transmission control module output value.	
36	Yaw rate sensor voltage	V	Yaw rate sensor voltage value put out from the yaw rate & lateral G sensor. Transmission control module input value.	
37	H&LR/C Solenoid Pressure	kPa	Target oil pressure calculated by the transmission control module for control of high & low reverse clutch pressure. This value decides the indicator current value.	



No.	Items	Unit of measure	Contents	Remarks
38	D/C Solenoid Pressure	kPa	Target oil pressure calculated by the transmission control module for control of the direct clutch pressure. This value decides the indicator current value.	
39	F/B Solenoid Pressure	kPa	Target oil pressure calculated by the transmission control module for control of the front brake pressure. This value decides the indicator current value.	
40	I/C Solenoid Pressure	kPa	Target oil pressure calculated by the transmission control module for control of the input clutch pressure. This value decides the indicator current value.	
41	P/L Solenoid Pressure	kPa	Target oil pressure calculated by the transmission control module for control of the line pressure. This value decides the indicator current value.	
42	L/U Solenoid Pressure	kPa	Target oil pressure calculated by the transmission control module for control of the lock-up clutch pressure. This value decides the indicator current value.	
43	AWD Solenoid Pressure	kPa	Target oil pressure calculated by the transmission control module for control of the transfer clutch pressure. This value decides the indicator current value.	
44	Yaw rate & G sensor ref. V	V	Yaw rate sensor reference voltage value put out from the yaw rate & lateral G sensor. At the time of battery voltage fluctuations, the yaw rate sensor uses this value for correction of the output value. DCCD control module input value.	This item is applied only to vehicle equipped with DCCD.
45	FR Wheel Speed	km/h MPH	Value calculated from the front ABS wheel speed sensor RH signal transmitted from VDC or ABS control module. Transmission control module input value.	
46	FL Wheel Speed	km/h MPH	Value calculated from the front ABS wheel speed sensor LH signal transmitted from VDC or ABS control module. Transmission control module input value.	



No.	Items	Unit of measure	Contents	Remarks
47	RR Wheel Speed	km/h MPH	Value calculated from the rear ABS wheel speed sensor RH signal transmitted from VDC or ABS control module. Transmission control module input value.	
48	RL Wheel Speed	km/h MPH	Value calculated from the rear ABS wheel speed sensor LH signal transmitted from VDC or ABS control module. Transmission control module input value.	
49	Steering Angle Sensor	deg	Steering angle of the steering wheel transmitted from the steering angle sensor. DCCD control module input value.	This item is applied only to vehicle equipped with DCCD.
50	Fwd/B solenoid current	A	Actual current value of the forward brake solenoid. Transmission control module output value.	
51	Fwd/B solenoid pressure	kPa	Target oil pressure calculated by the transmission control module for control of the forward brake pressure. This value decides the indicator current value.	
52	AT Learning	complete/incomplete	Learning status of AT Initial Learning.	
53	Yaw Rate	deg/s	Yaw rate of the vehicle body calculated from the output of the yaw rate & lateral G sensor. DCCD control module output value.	This item is applied only to vehicle equipped with DCCD.
54	Lateral G	m/s <sup>2</sup>	Lateral Acceleration of the vehicle body calculated from the output of the yaw rate & lateral G sensor. DCCD control module output value.	This item is applied only to vehicle equipped with DCCD.
55	DCCD Torque Distribution	0-6	Display of the initial LSD torque set value at the time of DCCD manual mode. At the time of auto mode: 0, Initial LSD torque "FREE" = 1, Initial LSD torque "Very small" = 2, Initial LSD torque "Small" = 3, Initial LSD torque "Medium" = 4, Initial LSD torque "Large" = 5, Initial LSD torque "LOCK" = 6	This item is applied only to vehicle equipped with DCCD.
56	DCCD Mode	0-3	Display of the mode setting status at the time of DCCD auto mode.	This item is applied only to vehicle equipped with DCCD.



No.	Items	Unit of measure	Contents	Remarks
57	Secondary Pulley Speed	rpm	Secondary pulley speed calculated by transmission control module derived from secondary speed sensor signal.	
58	Actual secondary pressure	MPa	Oil pressure value at secondary cylinder derived from secondary oil pressure (Line pressure).	
59	Sec. Sol. Actual Current	mA	Secondary pressure solenoid actual current value. Transmission control module output value.	
60	Actual Gear Ratio	—	Current gear ratio (Pulley ratio).	
61	Shift step in Manu. mode	—	Shift step in Manual mode. Transmission control module output value.	
62	Primary UP Duty	%	Primary UP solenoid control duty ratio. Transmission control module output value.	
63	Primary DOWN Duty	%	Primary DOWN solenoid control duty ratio. Transmission control module output value.	
64	Commanded Forward & Reverse Linear Solenoid Current	mA	Set current value for controlling F&R linear solenoid, calculated by transmission control module.	
65	Actual Forward & Reverse Linear Solenoid Current	mA	F&R linear solenoid actual current value. Transmission control module output value.	
66	Primary Pulley Speed	rpm	Primary pulley speed calculate by Transmission control module derived from primary speed sensor signal.	
67	Front Wheel Speed	rpm	F&R clutch axle speed calculated by transmission control module derived from front wheel speed sensor signal.	
68	Rear Wheel Speed	rpm	Transfer axle speed calculated by transmission control module derived from rear wheel speed sensor signal.	
69	Electric fluid pump indication duty	%	It indicates instructed Duty value from the Idle Stop control module to the Electric Fluid Pump.	
70	Lock-Up ON/OFF Solenoid	ON/OFF	Lock-Up ON/OFF solenoid drive signal. It is "ON" when lock-up. Transmission output value.	



No.	Items	Unit of measure	Contents	Remarks
71	Neutral Position Switch	ON/OFF	“ON” is indicated in case of N range or P range, and “OFF” is indicated for other ranges.	
72	Ignition Switch	ON/OFF	Ignition switch signal. Becomes ON when the ignition switch is ON.	
73	Tiptronic Mode Switch	ON/OFF	Manual mode switch signal. Becomes ON when the select lever is moved into the manual gate. Transmission control module input value.	
74	Cruise Control Signal	ON/OFF	Cruise control operation signal. Becomes ON when driving with cruise control.	
75	ABS Signal	ON/OFF	ABS operation signal. Becomes ON at the time of ABS operation.	
76	Down Switch	ON/OFF	Down switch signal. Becomes ON when the select lever is moved to the “- (minus)” side of the manual gate. Transmission control module input value.	
77	Stop Light Switch	ON/OFF	Stop light switch signal. Becomes ON when the brake pedal is depressed. Transmission control module input value.	
78	Up Switch	ON/OFF	Up switch signal. Becomes ON when the select lever is moved to the “+ (plus)” side of the manual gate. Transmission control module input value.	
79	Kick Down Switch	ON/OFF	Kickdown judgment signal transmitted from the engine control module. Becomes ON when kickdown is judged from change of the accelerator opening angle. Transmission control module input value.	
80	FWD Switch	ON/OFF	FWD switch signal. Becomes ON when a fuse is inserted into the FWD fuse holder. Transmission control module input value.	
81	Power Mode Switch	ON/OFF	Power mode switch signal. Becomes ON when the switch is ON. Transmission control module input value.	
82	Hold Mode Switch	ON/OFF	Snow hold mode switch signal. Becomes ON when the switch is ON. Transmission control module input value.	



No.	Items	Unit of measure	Contents	Remarks
83	1st Range Signal	ON/OFF	Inhibitor switch signal. Becomes ON when the select lever is in range 1. Transmission control module input value.	
84	2nd Range Signal	ON/OFF	Inhibitor switch signal. Becomes ON when the select lever is in range 2. Transmission control module input value.	
85	3rd Range Signal	ON/OFF	Inhibitor switch signal. Becomes ON when the select lever is in range 3. Transmission control module input value.	
86	D Range Signal	ON/OFF	Inhibitor switch signal. Becomes ON when the select lever is in range D. Transmission control module input value.	
87	R Range Signal	ON/OFF	Inhibitor switch signal. Becomes ON when the select lever is in range R. Transmission control module input value.	
88	N/P Range Signal	ON/OFF	Inhibitor switch signal. Becomes ON when the select lever is in range N or P. Transmission control module input value.	
89	4th Range Signal	ON/OFF	Inhibitor switch signal. Becomes ON when the select lever is in range 4. Transmission control module input value.	
90	Tiptronic Solenoid	ON/OFF	Sport shift solenoid drive signal. Becomes ON at the time of manual mode gear 1. Engine brake is applied when ON. Transmission control module output value.	
91	Torque Control Signal 1	ON/OFF	Torque-down request signal transmitted to the engine control module. The engine control module performs ignition timing retard and fuel cut control by combination of #1 and #2 and executes torque-down. Transmission control module output value.	
92	Torque Control Signal 2	ON/OFF	Same as "Torque Control Signal 1"	
93	2-4 Brake Timing Sol.	ON/OFF	2-4 Brake timing solenoid drive signal. Becomes "ON" at the time of drive signal output. Transmission control module output value.	



No.	Items	Unit of measure	Contents	Remarks
94	Low Clutch Timing Sol.	ON/OFF	Low clutch timing solenoid drive signal. Becomes "ON" at the time of drive signal output. Transmission control module output value.	
95	Shift Solenoid #2	ON/OFF	Shift solenoid 2 drive signal. Becomes "ON" at the time of drive signal output. Transmission control module output value.	
96	Shift Solenoid #1	ON/OFF	Shift solenoid 1 drive signal. Becomes "ON" at the time of drive signal output. Transmission control module output value.	
97	Shift Output 4	ON/OFF	Signal for the sport shift indicator light. Becomes ON in manual mode when shift-up or shift-down is possible. Transmission control module output value.	
98	Shift Output 3	ON/OFF	Signal for the sport shift indicator light. Becomes ON at the time of manual mode when the gear position is gear 4. Transmission control module output value.	
99	Shift Output 2	ON/OFF	Signal for the sport shift indicator light. Becomes ON at the time of manual mode when the gear position is gear 2 or gear 3. Transmission control module output value.	
100	Shift Output 1	ON/OFF	Signal for the sport shift indicator light. Becomes ON at the time of manual mode when the gear position is gear 1 or gear 3. Transmission control module output value.	
101	Diagnosis Lamp	ON/OFF	AT warning light lighting signal. Becomes ON when the warning light lights. Transmission control module output value.	
102	RR Diff. Oil Temp SW	ON/OFF	Rear differential temperature switch signal. Becomes OFF when the temperature rises and the contact becomes OFF. Normally ON. DCCD control module input value.	This item is applied only to vehicle equipped with DCCD.
103	ATF Temperature Lamp	ON/OFF	AT temperature warning light lighting signal. Becomes ON when the warning light lights.	



No.	Items	Unit of measure	Contents	Remarks
104	Shift Lock Solenoid	ON/OFF	Shift lock solenoid drive signal put out from the transmission control module or BIU. Becomes ON at the time of shift lock release.	
105	Economy Switch	ON/OFF	Economy switch signal. Becomes ON when the economy switch is switched ON. Transmission control module input value.	
106	Power Mode Lamp	ON/OFF	Power indicator light lighting signal. Becomes ON when the power mode switch is ON. Transmission control module input value.	
107	P Range	ON/OFF	Becomes ON when the select lever is in range P. Transmission control module input value.	
108	Torque Control Cut Sig.	ON/OFF	Signal transmitted from the engine control module prohibits torque reduction. Becomes ON when the prohibition signal is received. Transmission control module input value.	
109	P/N Signal	ON/OFF	Starter motor drive permission signal to the engine control module. Becomes ON when the select lever is in range N or P. Transmission control module output value.	
110	TCS Switch	ON/OFF	TCS switch signal. Becomes ON when the TCS switch is ON. Transmission control module output value.	
111	Hold Lamp	ON/OFF	Snow hold indicator light lighting signal. Becomes ON when the snow hold switch is ON. Transmission control module input value.	
112	N Range	ON/OFF	Becomes ON when the select lever is in range N. Transmission control module input value.	
113	Judgement of AWD	ON/OFF	Signal for drive type identification. Becomes ON for a vehicle with AWD. Transmission control module output value.	
114	Inhibitor SW 1	HIGH/LOW	Inhibitor switch signal. The transmission control module judges the current range position from the combination of #1, 2, 3, and 4. Transmission control module input value.	



No.	Items	Unit of measure	Contents	Remarks
115	Inhibitor SW 2	HIGH/LOW	Same as “Inhibitor SW1”	
116	Inhibitor SW 3	HIGH/LOW	Same as “Inhibitor SW1”	
117	Inhibitor SW 4	HIGH/LOW	Same as “Inhibitor SW1”	
118	Inhibitor SW 3 Monitor	HIGH/LOW	Open circuit diagnostic signal for the inhibitor switch 3 input circuit. Transmission control module input value.	
119	Back Lamp Relay	ON/OFF	Back-up light relay drive signal. Becomes ON at the time of drive signal output. Transmission control module output value.	
120	AT Power Relay	ON/OFF	PV ignition relay drive signal. Becomes ON with reverse connection of the battery terminals. Relay for control module protection. Transmission control module output value.	
121	H&LR/C Fluid Pressure	ON/OFF	High & low reverse clutch oil pressure switch signal. Becomes ON when the contact point is ON because of the oil pressure. Transmission control module input value.	
122	D/C Fluid Pressure	ON/OFF	Direct clutch oil pressure switch signal. Becomes ON when the contact point is ON because of the oil pressure. Transmission control module input value.	
123	F/B Fluid Pressure	ON/OFF	Front brake oil pressure switch signal. Becomes ON when the contact point is ON because of the oil pressure. Transmission control module input value.	
124	I/C Fluid Pressure	ON/OFF	Input clutch oil pressure switch. Becomes ON when the contact point is ON because of the oil pressure. Transmission control module input value.	
125	LC/B Fluid Pressure	ON/OFF	Low coast brake oil pressure switch signal. Becomes ON when the contact point is ON because of the oil pressure. Transmission control module input value.	
126	Signal of identified control module	ON/OFF	Signal for identifying the DCCD control module unit type (AUTO mode Yes or No). It shows ON if AUTO mode is Yes. DCCD control module output value.	This item is applied only to vehicle equipped with DCCD.



No.	Items	Unit of measure	Contents	Remarks
127	LC/B Solenoid	ON/OFF	Low coast brake solenoid drive signal. Becomes ON at the time of drive signal output. Transmission control module output value.	
128	LU&FWD/B Solenoid	ON/OFF	Lock-up & forward brake solenoid drive signal. Becomes ON at the time of drive signal output. Transmission control module output value.	
129	Center Diff. Lamp1	ON/OFF	DCCD indicator light lighting signal. Becomes ON when the initial LSD torque setting is "LOCK". DCCD control module output value.	This item is applied only to vehicle equipped with DCCD.
130	Center Diff. Lamp2	ON/OFF	DCCD indicator light lighting signal. Becomes ON when the initial LSD torque setting is "Large". DCCD control module output value.	This item is applied only to vehicle equipped with DCCD.
131	Center Diff. Lamp3	ON/OFF	DCCD indicator light lighting signal. Becomes ON when the initial LSD torque setting is "Medium". DCCD control module output value.	This item is applied only to vehicle equipped with DCCD.
132	Center Diff. Lamp4	ON/OFF	DCCD indicator light lighting signal. Becomes ON when the initial LSD torque setting is "Small". DCCD control module output value.	This item is applied only to vehicle equipped with DCCD.
133	Center Diff. Lamp5	ON/OFF	DCCD indicator light lighting signal. Becomes ON when the initial LSD torque setting is "Very small". DCCD control module output value.	This item is applied only to vehicle equipped with DCCD.
134	Center Diff. Lamp6	ON/OFF	DCCD indicator light lighting signal. Becomes ON when the initial LSD torque setting is "FREE". DCCD control module output value.	This item is applied only to vehicle equipped with DCCD.
135	Parking Position Switch	ON/OFF	Parking brake switch signal. Becomes ON when the parking brake switch is ON. DCCD control module input value.	This item is applied only to vehicle equipped with DCCD.
136	Center Diff. Relay	ON/OFF	DCCD relay drive signal. Becomes ON in auto mode and in manual mode when the initial LSD torque is other than "FREE". DCCD control module output value.	This item is applied only to vehicle equipped with DCCD.
137	AUTO/MANUAL Switch	Mode	DCCD manual mode switch signal. Becomes ON when the DCCD manual mode switch is ON. DCCD control module input value.	This item is applied only to vehicle equipped with DCCD.



No.	Items	Unit of measure	Contents	Remarks
138	AUTO Mode Lamp	ON/OFF	DCCD AUTO indicator light lighting signal. Becomes ON when the DCCD is in auto mode. DCCD control module output value.	This item is applied only to vehicle equipped with DCCD.
139	Fwd/B hydraulic pressure SW	ON/OFF	Forward brake oil pressure switch signal. Becomes ON when the contact point is ON because of the oil pressure. Transmission control module input value.	
140	L-range	ON/OFF	L-range SW signal. When the select lever is set in L-range, the monitor indicates [ON]. It shows the input value of the transmission control module.	
141	Emphasized idle stop request	OFF/ON	A signal from the transmission control module that requests prohibiting idle stop. When this signal is transmitted, the monitor indicates [OFF].	
142	Electric Fluid Pump Relay	ON/OFF	It indicates the state of the Electric Fluid Pump Relay. It means the output value from the Idle Stop control module.	
143	Electric Fluid Pump System status	Abnormal/Normal	Display the Electric Fluid Pump System status. When Electric Fluid Pump was diagnosed as abnormality, it is displayed with [Abnormal]. The output value from control module for idle stops.	



## Body Integrated Unit

### NOTE:

If you change the setup of Unit Customizing function, please be sure to follow service manuals when you work on this. If you set it incorrectly, it would be a cause of failures such as system troubles and etc.

No.	Items to be displayed	Unit of measure	Contents	Remarks
1	BATT voltage (control)	10 — 15 V	Battery continuity power supply. Input value to the BIU.	
2	BATT voltage (BACKUP)	10 — 15 V	Battery continuity power supply. Input value to the BIU.	
3	ABS_CM Power Voltage	10 — 15 V	Ignition system circuit voltage. Input value to the BIU.	
4	ACC voltage	10 — 15 V	ACC system circuit voltage. Input value to the BIU.	
5	Illumination VR Voltage	0 — 5 V	Input value from the illumination control dial.	
6	Illumi. output d-ratio	0 — 100%	Duty ratio for illumination control output from BIU. (Frequency:250Hz)	
7	Ambient temp sensor V	0 — 5 V	Input value from the ambient temperature sensor.	
8	Ambient Temperature	-40 — 87.5°C	Temperature is converted from input voltage to BIU.	
9	Fuel level voltage	0 — 8 V	Voltage value of fuel level sensors. Input value from the fuel level sensors to the BIU.	
10	Fuel level resistance	0 — 102.3 ohm	Resistance value of fuel level sensors. Input value from the fuel level sensors to the BIU.	
11	key-lock solenoid V	6 — 12 V	Output value to the key-lock solenoid. (The key lock functions that the key cannot be removed when the selector lever position is except for the P-range.)	
12	number of regist.	0 — 4Num.	Number of registered keys for keyless entry system.	
13	Front Wheel Speed	km/h	Average speed of the front wheels. Received from VDC/ABS control module.	CAN data
14	VDC/ABS latest f-code	DTC display	Most recent trouble codes of the VDC/ABS system. Received from VDC/ABS control module. As the items shown here are provisional codes, the DTC displayed by the VDC/ABS system shall be confirmed.	CAN data



No.	Items to be displayed	Unit of measure	Contents	Remarks
15	Blower fan steps	0 — 2	Blower fan control mode. Received from the A/C control module. 0 = OFF, 1 = Low, 2 = More than 2 levels	CAN data
16	Fuel level resistance 2	0 — 102.3 ohm	Fuel level sensor resistance value. Output value from the BIU to the combination meter.	CAN data
17	Fuel consumption	cc/s	Momentary injection quantity every 50 msec, converted to the injection quantity per second. Received from Engine control module.	CAN data
18	Coolant Temp.	-40 — 130°C	Engine coolant temperature. Received from Engine control module.	CAN data
19	Vehicle longitudinal G	m/s <sup>2</sup>	Acceleration/deceleration rate in the longitudinal direction. Received from VDC/ABS control module.	CAN data
20	SPORT Shift Stages	0 — 7 Step	Manual mode operation information. Received from Transmission control module. 0 = light OFF, 1 — 5 = gear position, 6 = fail, 7 = ATF temperature High/Low	CAN data
21	Shift Position	0 — 7	P-range = 7, R-range = 6, N-range = 5, D-range = 4, Manual = 8 (no input). With switching to manual mode, no input (8) is reached and the “SPORT shift stages” is changed. Received from Transmission control module.	CAN data
22	VDC/ABS condition	0 — 4	Operating condition of VDC/ABS. Received from VDC/ABS control module. 0 = ABS, 1 = TCS, 2 = VDC O (oversteering), 3 = VDC U (understeering), 4 = VDC OFF	CAN data
23	Destination Code	0 — 16	Vehicle specification classification. Received from the combination meter. 1 = Japan (normal), 2 = Japan (black face), 3 = Japan (with ADA), 4 = General (LH), 5 = Europe (LH), 6 = Saudi Arabia, 7 = Europe (RH), 8 = Australia, 9 = US, 10 = Canada	CAN data



No.	Items to be displayed	Unit of measure	Contents	Remarks
24	Touch SW	0 — 64	By set value input from the center display to BIU, change is caused by pressing the button on the touch panel. However, change is limited to the following procedure. Touch the 'INFO' button → Touch 'SET' → Touch 'Keyless entry' or 'Various settings' (But no correspondence to RESET).	CAN data
25	key-lock warning SW	ON/OFF	Input value from the key-lock warning switch. Becomes ON when the ignition key is inserted into the key cylinder.	
26	Stop Light Switch	ON/OFF	Input value from the brake switch. Becomes ON when the brake pedal is depressed.	
27	Front fog lamp SW input	ON/OFF	Input value from the front fog light switch. Becomes ON when the front fog light switch is turn ON.	
28	Rear fog lamp SW input	ON/OFF	Input value from the rear fog light switch. Becomes ON when the rear fog light switch is turn ON.	
29	TPMS input	ON/OFF	Display of the TPMS (Tire Pressure Monitoring System) registration status. Becomes ON when TPMS registration has been completed.	
30	lighting SW input	ON/OFF	Input value from the combination switch. Becomes ON when the headlights are set to ON.	
31	Door key-lock SW input	ON/OFF	Input value from the switch for the door key cylinder part. Becomes ON when the key is turned to the LOCK side.	
32	Door unlock SW input	ON/OFF	Input value from the switch for the door key cylinder part. Becomes ON when the key is turned to the UN-LOCK side.	
33	Driver's door SW input	ON/OFF	Input value from the driver's door switch. Becomes ON when the door is opened.	
34	P-door SW input	ON/OFF	Input value from the passenger's door switch. Becomes ON when the door is opened.	
35	Rear right door SW input	ON/OFF	Input value from the rear right door switch. Becomes ON when the door is opened.	



No.	Items to be displayed	Unit of measure	Contents	Remarks
36	Rear left door SW input	ON/OFF	Input value from the rear left door switch. Becomes ON when the door is opened.	
37	R Gate SW input	ON/OFF	Input value from the rear gate switch or the trunk lid switch. Becomes ON when the rear gate or the trunk is opened.	
38	Manual lock SW input	ON/OFF	Input value from the manual lock switch for the power window main switch part. Becomes ON when the manual lock switch is locked.	
39	Manual unlock SW input	ON/OFF	Input value from the manual lock switch for the power window main switch part. Becomes ON when the manual lock switch is unlocked.	
40	Lock SW	ON/OFF	Input value from the door status switch of the latch part of the door on the driver's side. Becomes ON when the lock status of the door on the driver's side is locked.	
41	Bright SW input	ON/OFF	Input value from the bright switch. Becomes ON when the bright switch is set to ON. The bright switch is the function for switching the illumination of instrument panel, monitor, heater control panel, and audio to bright when the position light is ON.	
42	Shift Button SW Input	ON/OFF	Input value from the shift lock cancel button of the shift lever. Becomes ON when the shift lock cancel button is pressed.	
43	Economy Switch	ON/OFF	Input value from the economy switch. Becomes ON when the economy switch is turn on.	
44	Tiptronic Mode Switch	ON/OFF	Input value from the tiptronic mode switch (manual mode switch). Becomes ON in manual mode.	
45	TIP UP SW input	ON/OFF	Becomes ON with shifting up in manual mode.	
46	TIP DOWN SW input	ON/OFF	Becomes ON with shifting down in manual mode.	
47	P SW	ON/OFF	Input value from the P-range switch. Becomes ON only in the P-range.	



No.	Items to be displayed	Unit of measure	Contents	Remarks
48	MT Reverse Switch	ON/OFF	Input value from the MT back -up light SW. Becomes ON when the shift lever is in the R range and the back-up light SW is set to ON.	
49	Kick Down Switch	ON/OFF	Input value from the kick down switch. This data is not being used now.	
50	R wiper ON SW input	ON/OFF	ON switch input value of the rear wiper switch. Becomes ON when the rear wiper switch is set to the ON position.	
51	R wiper INT SW input	ON/OFF	INT switch input value of the rear wiper switch. Becomes ON when the rear wiper switch is set to the INT position.	
52	R washer SW input	ON/OFF	Input value from the rear washer switch. Becomes ON when the rear washer switch turn on.	
53	Wiper deicer SW input	ON/OFF	Input value from the wiper deicer switch. Becomes ON when the wiper deicer switch turn on.	
54	Rear Defogger SW	ON/OFF	Input value from the rear defogger switch. Becomes ON when the rear defogger switch turn on.	
55	Driver's Seat SW input	ON/OFF	Input value from driver's seat buckle switch. Becomes ON when the seat belt is fastened.	
56	P seatbelt SW input	ON/OFF	Normally ON when no load acts onto the passenger seat. When a load acts onto the passenger seat, it becomes ON when the seat belt has been fastened and OFF when the seat belt has not been fastened.	
57	Fr wiper input	ON/OFF	Input value from the front wiper switch. Becomes ON when the front wiper is operated.	
58	Parking Brake Switch Input	ON/OFF	Input value from the parking brake SW. Becomes ON when the parking brake is pulled and the parking brake SW is set to ON.	
59	Registration SW input	ON/OFF	Input value from the registration switch. Becomes ON when the registration connector of keyless entry system is connected.	



No.	Items to be displayed	Unit of measure	Contents	Remarks
60	Identification SW input	ON/OFF	Identification of wagon or sedan. ON = Wagon, OFF = Sedan. Initial setting of the keyless entry system circuit.	
61	Driver's seat lock status SW input	ON/OFF	Input value from the driver's seat lock status switch. Becomes ON when doors are locked.	
62	Passenger's seat lock status SW input	ON/OFF	Input value from the passenger's seat lock status switch. Becomes ON when doors are locked.	
63	R gate lock status SW input	ON/OFF	Input value from the rear gate lock status switch. Becomes ON when a rear gate is locked.	
64	Smart wake-up input	ON/OFF	Input value of the smart wake-up signal from the collated control module. Becomes ON when the signal is input.	
65	Rr defogger output	ON/OFF	Output value to the rear defogger relay. Becomes ON when the rear defogger is operated.	
66	lock actuat. LOCK output	ON/OFF	Output value to the door lock actuator. Becomes ON when the lock signal is output.	
67	All seat UNLOCK output	ON/OFF	Output value to the door lock actuators of all seats. Becomes ON with output of the unlock signal.	
68	D-seat UNLOCK output	ON/OFF	Output value to the driver's door lock actuator. Becomes ON when the unlock signal is output.	
69	R gate/trunk UNLK output	ON/OFF	Output value to the rear gate/trunk lid lock actuator. Becomes ON when the unlock signal is output.	
70	Double lock output	ON/OFF	Output value to the door lock actuators. Becomes ON when the double lock signal is output.	
71	R wiper output	ON/OFF	Output value to the rear wiper motor. Becomes ON when the rear wiper is operated.	
72	Shift Lock Solenoid	ON/OFF	Output value to the shift lock solenoid. This solenoid becomes ON when both P range switch and brake switch are turn on.	



No.	Items to be displayed	Unit of measure	Contents	Remarks
73	Key locking output	ON/OFF	Output value to the key-lock solenoid. Becomes ON when the solenoid is operated. (The key lock functions that the key cannot be removed when the selector lever position is except for the P-range.)	
74	wiper deicer output	ON/OFF	Output value to the wiper deicer relay. Becomes ON when the wiper deicer relay is operated.	
75	Starter cutting output	ON/OFF	Starter relay cut signal for the immobilizer system. Becomes ON with operation of the starter cut relay.	Application only for LEGACY 04 MY, 05 MY
76	Hazard Output	ON/OFF	Output value of keyless answer-back. Becomes ON with hazard output.	Only when the keyless registration connector is not connected
77	Keyless Buzzer Output	ON/OFF	Output value to the keyless buzzer. Becomes ON at the time of buzzer output.	Only when the keyless registration connector is not connected
78	Belt buzzer output	ON/OFF	Output value to the belt buzzer. Becomes ON at the time of output to the belt buzzer.	
79	Horn Output	ON/OFF	Horn output of the security system. Becomes ON at the time of a system alarm.	
80	Siren Output	ON/OFF	Siren output of the security system. Becomes ON at the time of a security system alarm.	
81	D-belt warning light O/P	ON/OFF	Output value of the driver's seat belt warning lamp. Becomes OFF when the seat belt is fastened.	
82	P-belt warning light O/P	ON/OFF	Output value of the passenger's seat belt warning lamp. Becomes ON when a load is sensed for the front passenger seat. Becomes OFF when the seat belt is fastened.	
83	Illumination lamp O/P	ON/OFF	Output value of illumination control signal. Becomes ON when the position light is turned on. However, the ON time changes when the illumination brightness control dial is operated.	
84	Room lamp output	ON/OFF	Output value to the room lamp. Becomes ON when the room lamp lights. However, room lamp ON/OFF interlocked with BIU occurs only at the DOOR position.	



No.	Items to be displayed	Unit of measure	Contents	Remarks
85	key illumi. lamp o/p	ON/OFF	Output value to the key illumination light. Becomes ON when the key illumination light is operated.	
86	R fog lamp output	ON/OFF	Output value to the rear fog light relay. Becomes ON when the rear fog light is operated.	
87	R fog lamp monitor	ON/OFF	The rear fog light monitoring circuit is installed in the BIU. Becomes ON when the rear fog light is operated.	
88	Immobilizer lamp output	ON/OFF	Output value to the immobilizer pilot light in the combination meter. Becomes ON when the immobilizer pilot light is turned on.	
89	Keyless operation 1	Regist./Normal	Keyless mode judgement. Becomes "Registration" with registration mode. "Registration mode" is made when the registration connector is connected and the door lock switch is set to UNLOCK.	
90	Keyless operation 2	Deletion/Normal	Keyless mode judgement. Becomes "Deletion" with delete mode. Connect the keyless registration connector and perform key warning switch ON/OFF ten times within ten seconds while keeping the door lock switch to ON.	
91	EK alarm output	ON/OFF	The door opening status is put out to the alarm unit. Becomes ON when any door is open.	
92	TL alarm output	ON/OFF	Alarm output of the door alarm function. Becomes ON when a door is opened illegally while the door is in locked condition.	
93	CC Main Lamp	ON/OFF	Becomes ON when the cruise control main switch is set to ON. Received from the Engine control module and transmitted to the combination meter.	CAN data
94	CC Set Lamp	ON/OFF	Becomes ON when the cruise control set switch is set to ON. Received from the Engine control module and transmitted to the combination meter.	CAN data



No.	Items to be displayed	Unit of measure	Contents	Remarks
95	SPORT Lamp	ON/OFF	Becomes ON with shifting into sports mode. Received from the Transmission control module and transmitted to the combination meter.	CAN data
96	SPORT Blink	Blink/OFF	Brinks at the time of an AT fault. Received from the Transmission control module and transmitted to the combination meter.	CAN data
97	ATF Temperature Lamp	ON/OFF	Becomes ON when the ATF temperature is abnormally high. Received from the Transmission control module and transmitted to the combination meter.	CAN data
98	ATF Blink	Blink/OFF	Brinks at the time of an AT fault. Received from the Transmission control module and transmitted to the combination meter.	CAN data
99	ECO Lamp (AT)	ON/OFF	Becomes ON when the economy lamp lighting signal is ON. Received from Transmission control module.	CAN data
100	ECO Lamp (MT)	ON/OFF	Becomes ON when the economy lamp lighting signal is ON. Received from Transmission control module.	CAN data
101	Tire diameter abnormal 1	ON/OFF	Becomes ON when the FWD fuse is connected (when set to FF). Received from the Transmission control module and transmitted to the combination meter.	CAN data
102	Tire diameter abnormal 2	Blink/OFF	Blinking at approximately the speed difference when tires with one size difference set on front and rear wheels. Received from the Transmission control module and transmitted to the combination meter.	CAN data
103	Shift Up Indication	UP/OFF	Shift-up possible indication signal. Becomes UP when shift-up is possible.	Together with the arrow of the gear indication in the combination meter.
104	Shift Down Indication	DOWN/OFF	Shift-down possible indication signal. Becomes DOWN when shift-down is possible.	Together with the arrow of the gear indication in the combination meter.
105	SPORT Shift (buzzer 1)	ON/OFF	Shift down prohibition alarm. Becomes ON at the time of output to the buzzer. Received from the Transmission control module and transmitted to the combination meter.	CAN data



No.	Items to be displayed	Unit of measure	Contents	Remarks
106	SPORT Shift (buzzer 2)	ON/OFF	ATF abnormally high temperature alarm. Becomes ON at the time of output to the buzzer. Received from the Transmission control module and transmitted to the combination meter.	CAN data
107	ABS/VDC Judging	ABS/VDC	Vehicle identification information. Received from VDC/ABS control module.	CAN data
108	ADA Existence Judging	support / no support	Vehicle identification information. Becomes “support” if ADA (Active Driving Assist) is equipped.	CAN data
109	Small Light SW	ON/OFF	Input value from the position light switch. Becomes ON when the position lights are set to ON.	
110	Headlamp	ON/OFF	Input value from the headlight switch. Becomes ON when the headlights are turned on.	
111	DRL	ON/OFF	Input value of the DRL (Daytime Running Lights) output of the DRL control module. Becomes ON when the DRL are ON.	
112	High Beam	ON/OFF	Vehicle travelling information for ADA. Becomes ON when the headlights are switched to high beam.	
113	Lh Turn	ON/OFF	Vehicle travelling information for ADA. Becomes ON when the left turn signal becomes ON.	
114	Rh Turn	ON/OFF	Vehicle travelling information for ADA. Becomes ON when the right turn signal becomes ON.	
115	Rr Defogger SW	ON/OFF	Input value from the rear defogger switch. Becomes ON when the rear defogger switch is turned on.	
116	Australia Judging Flag	Australia/Others	Output from the BIU to the Engine control module.	
117	Large Diameter Tire	Large Tire/ Others	Tire identification information for the combination meter of models with 18 inch wheels. Correction of the error in the vehicle speed indication because of the 18-inch wheels. It is not become ‘Large Tire’ even when 18-inch wheels are mounted on a 17-inch vehicle.	
118	Number of cylinders	4 Cylinder/ 6 Cylinder	Discrimination information of vehicle	CAN data



No.	Items to be displayed	Unit of measure	Contents	Remarks
119	Cam shaft specification	DOHC/SOHC	Discrimination information of vehicle	CAN data
120	Turbo	no support / TURBO	Discrimination information of vehicle	CAN data
121	E/G displacement (2.5L)	2.5 L / OFF	Discrimination information of vehicle	CAN data
122	E/G displacement (3.0L)	3.0 L / OFF	Discrimination information of vehicle	CAN data
123	AT Vehicle ID Signal	ON/OFF	Discrimination information of vehicle	CAN data
124	Blower fan information	ON/OFF	Blower fan information. Becomes ON when the blower fan is not OFF. Received from Engine control module.	CAN data
125	Heater cock valve output	ON/OFF	Output value to the heater cock valve. Becomes ON at the time of heater cock valve operation.	
126	Power Window (UP)	ON/OFF	Output value to the power window control module. Becomes ON at the time of power window operation. The glass on the driver's side is raised when the keyless LOCK button is pressed continuously.	
127	Power Window (Down)	ON/OFF	Output value to the power window control module. Becomes ON at the time of power window operation. The glass on the driver's side is lowered when the keyless UNLOCK button is pressed continuously.	
128	Keyless buzzer	ON/OFF	Output value to the keyless buzzer. Becomes ON at the time of keyless answer-back buzzer operation.	
129	Bright Request	ON/OFF	Input value to BIU. Becomes ON when a demand exists. Function for increase the brightness of instrument panel illumination, monitor, air conditioner, and audio when the lighting switch is ON.	
130	P/W ECM Failure	OK/NG	Power window control module fault information. Becomes NG at the time of a fault.	CAN data
131	Keyless Hook SW	ON/OFF	Input value from the power window control module. Becomes ON when the keyless hook switch is ON.	CAN data
132	Door lock SW (Open)	ON/OFF	Input value from the power window control module. Becomes ON at the time of unlocking operation of the door lock switch (manual lock switch).	CAN data



No.	Items to be displayed	Unit of measure	Contents	Remarks
133	Door lock SW (Close)	ON/OFF	Input value from the power window control module. Becomes ON at the time of locking operation of the door lock switch (manual lock switch).	CAN data
134	Door Key SW (Open)	ON/OFF	Input value from the door key switch (switch of the door key cylinder part). Becomes ON at the time of unlocking operation.	
135	Door Key SW (Close)	ON/OFF	Input value from the door key switch (switch of the door key cylinder part). Becomes ON at the time of locking operation.	
136	Under hook registration	ON/OFF	Becomes ON at the time of registration mode for the keyless hook function.	
137	Hook registration end	ON/OFF	Becomes ON at the time of keyless hook registration completion.	
138	Unlock request	ON/OFF	Becomes ON when the door hook code input is OK. Received from the power window control module.	CAN data
139	Center display failure	OK/NG	Center display fault information. OK means system is normal, NG means system is abnormal. Received from the center display.	CAN data
140	NAVI Failure	OK/NG	Navigation system fault information. OK means system is normal, NG means system is abnormal. Received from the center display.	CAN data
141	IE Bus failure	OK/NG	IE bus fault information. At present, these data are not used.	
142	Auto A/C failure	OK/NG	Auto A/C control module fault information. OK means system is normal, NG means system is abnormal. Received from the auto A/C control module.	CAN data
143	EBD Warning Light	ON/OFF	Operating condition for the EBD warning light. Becomes ON when the warning lamp lights. Received from VDC/ABS control module.	CAN data
144	ABS Warning Light	ON/OFF	Operating condition for the ABS warning light. Becomes ON when the warning lamp lights. Received from VDC/ABS control module.	CAN data



No.	Items to be displayed	Unit of measure	Contents	Remarks
145	VDC OFF flag	ON/OFF	VDC operation status. Becomes ON by VDC OFF (becomes ON when the VDC OFF switch becomes ON). Received from VDC/ABS control module.	CAN data
146	VDC/ABS OK B	OK/NG	VDC/ABS system fault information. OK means system is normal, NG means system is abnormal. Received from the VDC/ABS control module.	CAN data
147	Lighting I Switch Input	ON/OFF	Input value from the Combination SW. Becomes ON when the lighting SW is set to the Tail position.	
148	Lighting II Switch Input	ON/OFF	Input value from the Combination SW. Becomes ON when the lighting SW is set to the Head position.	
149	Dimmer Hi Switch Input	ON/OFF	Input value from the Combination SW. Becomes ON when the Dimmer & Passing SW is set to the "High beam" position.	
150	Dimmer Pass Switch Input	ON/OFF	Input value from the Combination SW. Becomes ON when the Dimmer & Passing SW is set to the "Passing" position.	
151	Lighting I Lamp Output	ON/OFF	Output value to the tail & illumination relay. Becomes ON when the tail & illumination relay is operated.	
152	Lighting II Lamp Output	ON/OFF	Output value to the low beam relay. Becomes ON when the low beam relay is operated.	
153	Lighting Hi Lamp Output	ON/OFF	Output value to the high beam relay. Becomes ON when the high beam relay is operated.	For North American models: Becomes ON also at the time of DRL lighting.
154	Front Fog Lamp Output	ON/OFF	Output value to the front fog light relay. Becomes ON when the front fog light relay is operated.	
155	DRL Cancel Output	ON/OFF	Output value to the DRL (Daytime Running Lights) cancel circuit. Becomes ON when the Dimmer & Passing switch is set to the "High beam" position.	This item is applied only to North American models.



No.	Items to be displayed	Unit of measure	Contents	Remarks
156	Power Supply Tr	ON/OFF	Output value to the transistor supplying back-up voltage to the headlight. Becomes ON in the following cases. When the ignition SW is OFF and the lighting SW is set to the "Tail" position. Becomes ON when the lighting SW is set to the "ACC" position or to ON.	
157	Foot Lamp Output	ON/OFF	Output value to foot lamp RH or LH. Becomes ON when foot lamp RH or foot lamp LH is switched on.	
158	Spot map lamp output	ON/OFF	Output value to Spot map lamp. Becomes ON when Spot map lamp is switched on.	
159	Echo switch information	ON/OFF	Economy Switch ON/OFF signal from BIU.	CAN data
160	Off delay time	OFF, Short, Normal, Long	Set value for the delay time until the room lamp goes out.	
161	Auto lock time	20, 30, 40, 50, 60 sec	Set value for the auto locking time.	This item is applied only to models other than for North America and U.K.
162	Outside Temp. Offset	°C(-2.0, -1.5, -1.0, -0.5, 0, 0.5, 1.0, 1.5, 2.0)	Offset value for discrepancy correction of outside air temperature and display value.	BIU can be set in increments of 0.5°C but the display only shows increments of 1°C.
163	Rr defogger op. mode	Continue/Normal	Set value for the rear defogger operation time. Normal: Automatically stops 15 minutes after switch has been turned on. Continue: Turns on for 15 minutes and turns off for 2 minutes repeatedly until switch is turned off.	
164	Wiper deicer op. mode	Continue/Normal	Set value for the wiper deicer operation time. Normal: Automatically stops 15 minutes after switch has been turned on. Continue: Turns on for 15 minutes and turns off for 2 minutes repeatedly until switch is turned off.	
165	Security Alarm Setup	ON/OFF	Set value for the alarm at the time of security system operation. ON: The alarm (hazard, horn or siren) operates. OFF: The alarm does not operate.	This item is applied only to models for Japan and North America.



No.	Items to be displayed	Unit of measure	Contents	Remarks
166	Impact Sensor Setup	ON/OFF	Impact sensor operation set value. ON: The impact sensor operates. OFF: The impact sensor does not operate.	When set to "ON", it becomes effective when the "Impact sensor" is set to "ON". This item is applied only to models for Japan and North America.
167	Alarm delay setup	ON/OFF	Set value for the delay time of the security system. ON: The alarm monitoring function operates 30 sec after keyless locking. OFF: The alarm monitoring function operates simultaneously with keyless locking.	This item is applied only to models for Japan and North America.
168	Lockout prevention	ON/OFF	Set value for the key lockout prevention function. ON: The lockout prevention function operates. OFF: The lockout prevention function is stopped.	This item is applied to models other than U.K.
169	Impact sensor	ON/OFF	Set value of the impact sensor equipped or not equipped. ON: Control in impact sensor installed mode. OFF: Control in impact sensor not installed mode.	Must be set to "OFF" for vehicles not equipped with an impact sensor. Warning (hazard, horn or siren) operates erroneously when set to "ON". This item is applied only to models for Japan and North America.
170	Siren setting	ON/OFF	Set value of the siren equipped or not equipped. ON: The siren operates at the time of alarm operation. OFF: The horn operates at the time of alarm operation.	Must be set to "OFF" for vehicles not equipped with a siren. When set to "ON", the horn does not operate at the time of alarm operation. This item is applied only to Japanese models.
171	Answer-back buzzer setup	ON/OFF	Answer-back buzzer operation set value. ON: The buzzer operates at the time of keyless lock/unlock operation. OFF: The buzzer does not operate at the time of keyless lock/unlock operation.	



No.	Items to be displayed	Unit of measure	Contents	Remarks
172	Hazard answer-back setup	ON/OFF	Hazard answer-back operation set value. ON: The hazard lamp operates at the time of keyless lock/unlock operation. OFF: The hazard lamp does not operate at the time of keyless lock/unlock operation.	
173	Automatic locking setup	ON/OFF	Auto lock operation set value. ON: Auto lock operates. OFF: Auto lock does not operate.	When set to "ON", it becomes effective when "Auto locking" is set to "ON". This item is applied to models other than for North America and U.K..
174	Ans.-back Buzzer	ON/OFF	Set value of the answer-back buzzer equipped or not equipped. ON: Control in answer-back buzzer installed mode. OFF: Control in answer-back buzzer not installed mode.	Must be set to "OFF" for vehicles not equipped with an answer-back buzzer.
175	Auto locking	ON/OFF	Set value of the auto lock equipped or not equipped. ON: Control in auto locking installed mode. OFF: Control in auto locking not installed mode.	Must be set to "OFF" for vehicles not equipped with auto locking. This item is applied to models other than for North America and U.K.
176	Initial Keyless Setting	—	Function for initializing the set values related to the keyless entry system.	No.141:30 sec., No.150:OFF, No.151:ON, No.152:ON, No.153:OFF
177	Initial button setting	—	Function for initializing the set values for the various function settings.	No.140:Normal, No.142:Normal, No.143:Normal, No.147:ON
178	Initial Security setting	—	Function for initializing the set values related to the security system.	No.144:OFF, No.145:OFF, No.146:ON, No.149:OFF
179	Select unlock switch	Selection/ALL	Set value for switching between select unlock and all seats unlock. Selection: Control in select unlock mode. ALL: Control in all seats unlock mode.	This item is applied only to European models.



No.	Items to be displayed	Unit of measure	Contents	Remarks
180	Passive Alarm	ON/OFF	Passive alarm system ON/OFF set value. ON: Control in passive alarm system equipped mode. OFF: Control in passive alarm system not equipped mode.	This item is applied only to North American models.
181	Door open warning	support / no support	Set value for the door open warning function. support: When door open condition continues for 30 minutes or more, the room lamp, the key ring illumination, and the door warning lamp interlocked with doors will be turned off to prevent battery failure. no support : Room lamp, key ring illumination, and door warning are lit continuously.	
182	Dome Light Alarm Setting	ON/OFF	Set value for room lamp lighting or not at the time of alarm by the security system. ON: The room lamp is lit continuously at the time of alarm. OFF: At the time of an alarm, the room lamp goes out after the set delay time.	This item is applied only to models for Japan and North America.
183	Map Light Setting	ON/OFF	Set value whether the map lamp is to be light interlocked to the room lamp or not at the time of door opening. ON: The map lamp also light interlocked with the dome light. OFF: The map lamp remains off and does not light interlocked with the dome light.	
184	Belt Warning Switch	ON/OFF	Setting value that controls activation/non-activation of the Seat Belt Warning System warning buzzer and warning light.	
185	Keyless P/W Switch	ON/OFF	Setting value that controls whether or not the power window will operate when the keyless lock/unlock button is depressed and held down.	This item is applied only to Japanese models.
186	A/C ECM setting	support / no support	Set value of the auto A/C control module equipped or not equipped. Set to "support" for vehicles equipped with the A/C control module.	When this item is not set correctly, the illumination control may not function correctly.



No.	Items to be displayed	Unit of measure	Contents	Remarks
187	P/W ECM setting	support / no support	Set value of the power window control module equipped or not equipped. Set to "support" for vehicles equipped with power window control module.	
188	Center display setting	support / no support	Set value of the center display equipped or not equipped. Set to "support" for vehicles equipped with a center display.	When this is set to "no support" for vehicles equipped with a center display, the center display information may not be displayed correctly.
189	wiperdeicer	support / no support	Set value of the wiper deicer equipped or not equipped. Set to "support" for vehicles equipped with a wiper deicer.	When this is set to "no support" for vehicles equipped with a wiper deicer, the wiper deicer will not operate even when the wiper deicer switch is set to ON.
190	Rear fog light setting	support / no support	Set value of the rear fog lamp equipped or not equipped. Set to "support" for vehicles equipped with a rear fog lamp.	When this is set to "no support" for vehicles equipped with a rear fog lamp, the rear fog lamp will not operate when the rear fog lamp switch is set to ON.
191	Illumination Control On/Off	support/no support	Illumination control function effective/disabled setting. Set to "support" for vehicles equipped with illumination control.	When set to "no support" for vehicles equipped with illumination control, the brightness cannot be adjusted with illumination control. This item is applied only to European models.
192	Sedan/Wagon Setting	Wagon/Sedan	Vehicle type set value. Set to "Wagon" for wagons and to "Sedan" for sedans.	When this item is not set correctly, door lock control may not operate correctly.
193	MT/AT Setting	AT/MT	Transmission type set value. Set to "AT" for AT vehicles and to "MT" for MT vehicles.	When this item is not set correctly, shift lock, key interlock, etc. may not function correctly.
194	6MT Setting	6MT/Other than 6MT	Transmission type set value. Set to "6MT" for 6MT vehicles.	



No.	Items to be displayed	Unit of measure	Contents	Remarks
195	Double Lock On/Off Setting	support/no support	Double lock. Function effective/disabled set value. Set to "support" for vehicles equipped with double lock.	When this is set to "no support" for vehicles equipped with double lock, double lock does not operate. Door lock control also may not operate correctly.
196	Factory or Market setting	Factory/Market	Factory mode set value. This item must be set to "Market".	In case of setting to "Factory", the set values for No. 163 to 166 all are set to "no support", so that the corresponding items must be set again.
197	Security setup	ON/OFF	Set value of the security system equipped or not equipped. Set to "ON" for vehicles equipped with a security system.	This item applies only to models for U.K.

## Collation Control Module

No.	Items to be displayed	Unit of measure	Contents	Remarks
1	Driver's Request SW	ON/OFF	Becomes "ON" when the driver's request switch is pressed. Input value to the collation control module.	
2	Passenger's Request SW	ON/OFF	Becomes "ON" when the passenger's request switch is pressed. Input value to the collation control module.	
3	Rear Gate Request SW	ON/OFF	Becomes "ON" when the rear gate request switch is pressed. Input value to the collation control module.	
4	IGN SW	ON/OFF	Becomes "ON" when the IG switch is on. Input value to the collation control module.	
5	ACC SW	ON/OFF	Becomes "ON" when the IG switch is in ACC. Input value to the collation control module.	
6	Incorrect vehicle ID	Yes/No	Becomes "Yes" when the Access Key ID data and collation control module are different during Access Key ID collation.	
7	No response	Yes/No	Becomes "Yes" when there is no response from the Access Key during Access Key collation.	



No.	Items to be displayed	Unit of measure	Contents	Remarks
8	Incorrect response code, format	Yes/No	Becomes “Yes” when the response code and the ID code of the Access Key differ from the code of the collation control module during Access Key collation.	
9	Incorrect ID code	Yes/No	Becomes “Yes” when the received Access Key ID is different from the collation control module ID Code during Access Key button operation.	
10	Incorrect rolling code	Yes/No	Becomes “Yes” when the data received from the Access Key are different from the operation code in the collation control module during Access Key button operation.	
11	Smart Cancel	Cancel/Normal	Becomes “Cancel” during cancellation of the smart function.	
12	Immobilizer	Unset/Set	Becomes “Set” when the immobilizer is set.	
13	ECM intercommunication ID confirmation (Remote control engine starter requested)	OK/NG	Becomes “NG” when the ID collation of the collation control module and remote control engine starter is NG or when no remote control engine starter is registered.	
14	Code registration confirmation (remote control engine starter communication)	Registered/Unregistered	Becomes “Unregistered” when the remote control engine starter code is not registered or when an abnormality has occurred during registration.	
15	Abnormal EEPROM access	Abnormal/Normal	Becomes “Abnormal” when an abnormality has occurred during reading from or writing to the EEPROM of the steering lock control module.	
16	IGN1 (linear) status	ON/OFF	Becomes “ON” when the IG switch is on. Input value to the IG circuit of the steering lock control module.	
17	IGN1 (communication)	ON/OFF	Becomes “ON” when the IG switch is on. Input value by communication to the steering lock control module.	
18	Lock confirmation	Confirmed/Unconfirmed	Becomes “Confirmed” when the steering lock position is locked.	
19	Unlock confirmation	Confirmed/Unconfirmed	Becomes “Confirmed” when the steering lock position is unlocked.	
20	Engine start	Engine start permission/Engine start prohibition	Becomes “Engine start permission” when the engine start permission conditions are satisfied for the steering lock control module.	



No.	Items to be displayed	Unit of measure	Contents	Remarks
21	Sensor abnormal (past)	Abnormal/Nor-mal	Becomes “Abnormal” when the lock and unlock sensors of the steering lock control module are on at the same time.	
22	Motor power supply short-circuit abnormal (past)	Abnormal/Nor-mal	Becomes “Abnormal” in case of an inconsistency between the “Power supply” received by the steering lock control module from the power supply control module and the “Power supply control signal”. (Short-circuit fault)	
23	Motor power supply open abnormal (past)	Abnormal/Nor-mal	Becomes “Abnormal” in case of an inconsistency between the “Power supply” received by the steering lock control module from the power supply control module and the communicated “Power supply control signal”. (Open fault)	
24	Motor driver short-circuit abnormal (past)	Abnormal/Nor-mal	Becomes “Abnormal” when a short-circuit fault is detected in the steering lock control module motor drive circuit or in a relay or other internal circuit.	
25	Motor driver open abnormal (past)	Abnormal/Nor-mal	Becomes “Abnormal” when an open fault is detected in the steering lock control module motor drive circuit or in a relay or other internal circuit.	
26	Steering lock lock/unlock command reception history	ON/OFF	Becomes “ON” when there is a history of receiving a steering lock or a steering unlock command from the ID code box.	
27	Lock bar engagement abnormal (past)	ON/OFF	Becomes “ON” when there is no unlock detection within a specified time after steering unlock energization start, except in case of a motor driver open fault or a motor supply open fault.	
28	Push start abnormal (past)	Abnormal/Nor-mal	“Abnormal” is indicated if in the past there has been a short-circuit fault in the steering lock control module power supply circuit short-circuit motor supply or a sensor fault or motor driver short-circuit fault.	
29	Sleep possible status	Possible/Impossible	Becomes “Possible” when the ID code box is in a state where sleep is possible.	



No.	Items to be displayed	Unit of measure	Contents	Remarks
30	Wake-up transmission status	Transmission/No transmission	Becomes "Transmission" when the ID code box wakes up and the LIN bus becomes active.	
31	EGI code reception status	Not yet received/Reception	Becomes "Reception" when the ID code box receives immobilizer confirmation from the engine control module during engine start operation.	
32	Engine start permission request reception status	Not yet received/Reception	Becomes "Reception" when the ID code box receives an engine start request from the collation control module during engine start operation.	
33	Provisional injection request reception status	Not yet received/Reception	Becomes "Reception" when the ID code box can communicate with the engine control module during engine start operation. Output value from the ID code box to the engine control module.	
34	Code collation result between collated ECM and ID code box	Abnormal/Normal	Becomes "Abnormal" when the result of the code collation of the ID code box and collation control module is abnormal.	
35	Code collation result between steering locked ECM and ID code box	Abnormal/Normal	Becomes "Abnormal" when the result of the code collation of the ID code box and steering lock control module is abnormal.	
36	Steering lock unlock request reception status	Not yet received/Reception	Becomes "Reception" when the ID code box receives a steering unlock request from the collation control module. Becomes "Not yet received" 10 sec after stop of the unlock request or at the time of steering control module reset.	
37	Steering lock lock request reception status	Not yet received/Reception	Becomes "Reception" when the ID code box receives a steering lock request from the collation control module. Becomes "Not yet received" 10 sec after stop of the lock request or at the time of steering control module reset.	
38	ID code registration mode status	Normal/Regist./Deletion	Indicates the present mode setting status of the collation control module.	



No.	Items to be displayed	Unit of measure	Contents	Remarks
39	Smart related ECM code registration mode status	On mode/Nor-mal	Becomes “On mode” during control module code confirmation of the collation control module, ID code box, and steering control module.	
40	ID code collation completion confirmation	Completed/Nor-mal	Becomes “Completed” when registration has completed collation of the ID code. (“Normal” is always displayed during data monitoring.)	
41	ID code registration completion confirmation	Completed/Nor-mal	Becomes “Completed” when registration has completed registration of the ID code. (“Normal” is always displayed during data monitoring.)	
42	Smart related ECM code registration completion confirmation	Completed/Nor-mal	Becomes “Completed” when registration has completed control module code registration. (“Normal” is always displayed during data monitoring.)	
43	Registered smart key confirmation status	Confirming/Nor-mal	Becomes “Confirming” when registration is confirming a registered smart key.	
44	Smart related ECM code confirmation status	Confirming/Nor-mal	Becomes “Confirming” while registration is confirming an control module code. (“Normal” is always displayed during data monitoring.)	
45	ID code registration status	Registering/Nor-mal	Becomes “Registering” while registration registers an ID code. (“Normal” is always displayed during data monitoring.)	
46	ID code collation status	Collation Immo-bi/Collation Smart/Normal	During registration, “Collation Immo-bi” is displayed during immobilizer collation and “Collation Smart” is displayed during smart collation. (“Normal” is always displayed during data monitoring.)	
47	All registered keys confirmation status	Confirming/Nor-mal	“Confirming” is displayed during confirmation of all registered keys.	
48	Confirmed number of all registered keys	0 — 7Num.	Displays the number of keys that need to be confirmed only when the registration operation requires confirmation of all registered keys. (“0” is always displayed during data monitoring.)	
49	Number of required registrations (smart)	0 — 7Num.	Displays the maximum number which can be registered at a production plant.	



No.	Items to be displayed	Unit of measure	Contents	Remarks
50	Number of collation completed (smart)	0 — 7Num.	Displays the number of Access Key collated during the registration operation while registration mode is engaged. ("0" is always displayed during data monitoring.)	
51	Number of registration completed (smart)	0 — 7Num.	Displays the total number of Access Key registered to the collation control module.	
52	ID Code Box ID	ON/OFF	Becomes "ON" when the ID code box is connected to the collation control module. (LIN communication)	
53	Power Supply ECM	ON/OFF	Becomes "ON" when the power supply control module is connected to the collation control module. (LIN communication)	
54	Steering Lock ECM	ON/OFF	Becomes "ON" when the steering lock control module is connected to the collation control module. (LIN communication)	
55	Driver's request SW ON edge history	ON/OFF	Becomes "ON" when the driver's request switch has been pressed even once after reset or deletion of the operation history.	
56	Passenger's request SW ON edge history	ON/OFF	Becomes "ON" when the passenger's request switch has been pressed even once after reset or deletion of the operation history.	
57	Rear gate request SW ON edge history	ON/OFF	Becomes "ON" when the rear request switch has been pressed even once after reset or deletion of the operation history.	
58	Collation OK result history (driver's external transmitter + interior tuner)	ON/OFF	Becomes "ON" when collation has been performed in the driver's external detection area even once after reset or deletion of the operation history.	
59	Collation OK result history (passenger's external transmitter + interior tuner)	ON/OFF	Becomes "ON" when collation has been performed in the passenger's external detection area even once after reset or deletion of the operation history.	
60	Collation OK result history (front interior transmitter + interior tuner)	ON/OFF	Becomes "ON" when collation has been performed in the front interior detection area even once after reset or deletion of the operation history.	



No.	Items to be displayed	Unit of measure	Contents	Remarks
61	Collation OK result history (rear interior transmitter + interior tuner)	ON/OFF	Becomes “ON” when collation has been performed in the rear interior detection area even once after reset or deletion of the operation history.	
62	Collation OK result history (immobilizer amplifier + immobilizer amplifier)	ON/OFF	Becomes “ON” when collation has been performed in the immobilizer amplifier detection area even once after reset or deletion of the operation history.	
63	Collation OK result history (rear gate internal transmitter + interior tuner)	ON/OFF	Becomes “ON” when collation has been performed in the rear gate internal detection area even once after reset or deletion of the operation history.	
64	Collation OK result history (rear gate external transmitter + interior tuner)	ON/OFF	Becomes “ON” when collation has been performed in the rear gate external detection area even once after reset or deletion of the operation history.	



## Power Supply Control Module

No.	Items to be displayed	Unit of measure	Contents	Remarks
1	Push start SW 1	ON/OFF	Push start switch 1 signal. Becomes "ON" when the push engine switch (push-button ignition switch) has been pressed. Input value to the power supply control module.	
2	Push start SW 2	ON/OFF	Push start switch 2 signal. Becomes "ON" when the push engine switch (push-button ignition switch) has been pressed. Input value to the power supply control module.	
3	Stop light SW	ON/OFF	Stop light switch signal. Becomes "ON" when the brake pedal is pressed. (Vehicle with automatic transmission)	
4	Steering unlock SW	ON/OFF	Steering unlock switch signal. Becomes "ON" when the steering lock unlock switch is on. Input value from the steering lock control module.	
5	Shif P signal	ON/OFF	Becomes "ON" when the select lever is in the P-range. Input value to the power supply control module.	
6	Neutral SW/Clutch SW	ON/OFF	Neutral switch/clutch switch signal. Becomes "ON" when the select lever of an automatic transmission is in P-range or N-range or when the clutch pedal of a vehicle with manual transmission is pressed.	
7	IGN2 relay monitor (drive output)	ON/OFF	Becomes "ON" at the time of IG2 relay (push start) drive output.	
8	IGN1 relay monitor (drive output)	ON/OFF	Becomes "ON" at the time of IG1 relay (push start) drive output.	
9	ACC relay monitor	ON/OFF	Becomes "ON" at the time of ACC relay (push start) drive output.	
10	IGN2 relay monitor (coil voltage)	ON/OFF	Value of the output voltage of the internal circuit of the power supply control module. Becomes "ON" at the time of IGN2 relay drive output.	
11	IGN1 relay monitor (coil voltage)	ON/OFF	Value of the output voltage of the internal circuit of the power supply control module. Becomes "ON" at the time of IGN1 relay drive output.	
12	IGN latch monitor	ON/OFF	Becomes "ON" when the ignition switch is on.	



No.	Items to be displayed	Unit of measure	Contents	Remarks
13	STSW signal monitor	ON/OFF	Becomes “ON” when the clutch pedal (manual transmission) or the brake pedal (automatic transmission) is pressed and the push engine switch (push-button ignition switch) is pressed.	
14	ACCR signal	ON/OFF	Becomes “ON” at the time of starter relay drive output.	
15	Vehicle speed signal	Drive status / Stop status	Becomes “Drive status” when the vehicle speed signal is received and drive status is confirmed.	
16	English Speed	Rotating / Stopped	Switches to “Rotating” when the engine speed signal is received and engine rotation state is confirmed.	
17	Power supply status	All OFF status/ ACC relay ON status/ IGN1 relay ON status/ IGN2 relay ON status/ Undefined status	Displays the present power supply status. ALL OFF status: IG1 relay (push start), IG2 relay (push start), ACC relay (push start) are all OFF. ACC relay ON status: Accessory relay ON. IGN1 relay ON status: Ignition ON. IGN2 relay ON status: Ignition ON. Undefined status: Pressing the push engine switch (push-button ignition switch) with the clutch pedal or the brake pedal not pressed.	

## Gateway Control Module

No.	Items to be displayed	Unit of measure	Contents	Remarks
1	BD_Wake line status	Wakeup/Sleep	“Wakeup” is activated when there is a request for CAN communication from the body integrated module. (“Wakeup” is always displayed during SSM connection.)	
2	Direct line IGN entry status	ON/OFF	Becomes “ON” when there is IG input into the gateway control module.	
3	Direct line ACC entry status	ON/OFF	Becomes “ON” when there is ACC input into the gateway control module.	



## Communication Error Code List

### Error Message

- Interface box is not connected.
- Communication error has occurred.
- Not enough memory to execute application.
- Communication port could not be opened.
- Write operation to the communication port failed.
- Read operation from the communication port failed.
- Error occurred while communicating with the interface box.
- Communication initialization failed.
- Interface box cannot be found.
- A valid interface box is not connected.
- System does not Support this Function.
- Printing cannot be executed with the selected printer. Select another printer, and execute the command again.

Error Code	Required Action
4007 4112	Check the status of the USB cable connection. (There may be a break in the USB cable.)
4008 4015 4112	Data is not being sent from the control module of the system for which fault diagnosis is being performed. Confirm that the ignition switch is turned on. Also confirm that interface box power is turned on.
4100	There is not enough PC memory. If there are other applications running on the PC, shut them down.
4108 4109 4110 4112	There is a problem with the USB port that is currently being used. If the PC has more than one USB port, try using a different one. If the PC has only one USB port, it may be defective. Check the USB port.
4111 4112 4113 4114 4115 4116 4117 4118	Digital noise may be getting into the USB cable and/or diagnosis cable, causing a problem with communication. Eliminate the source of the digital noise.
4119 4200	The USB device driver is not installed on the PC. Re-install the latest PC application.
4201 4202	The vehicle for which fault diagnosis is being performed does not support the SSMIII. Also, there may be some abnormality with some of the PC application data. Re-install the latest PC application.
4208	Printing cannot be executed with the selected printer. Select another printer, and execute the command again. Also, check the printer cable connection and printer settings.

\*If error code beside above list is displays, start SSMIII (PC Application) again after restarting PC, turn off and on vehicle's ignition switch.



**Error Message**

- Present software doesn't support this System. Communication will be finished.

Error Code	Required Action
None	The vehicle for which fault diagnosis is being performed does not support the SSMIII. Also, there may be some abnormality with some of the PC application data. Re-install the latest PC application.

**Error Message**

- Communication Initialization Failed. Communication initialization will be finished.

Error Code	Required Action
None	<ul style="list-style-type: none"><li>• The selection on the menu for selecting a particular system may be for a system that is not equipped on the vehicle for which fault diagnosis is performed.</li><li>• Perform the same action as that described for error code 4112.</li></ul>



## Control Module Reprogramming Error Code List

### Control Module Reprogramming Error Code List (PC Display)

Pass Thru<SSMIII>&Remote<NSM>

Error Code	Error Message	Cause	Corrective action
102	Cannot open file.	If failed to open the PAK file.	1. Make sure if the PAK file is correct. 2. Close all applications opened. 3. Re-start Windows. 4. Re-install SSMIII (PC application)
103	Error occurred while reading file.	If failed to read from the PAK.	1. Make sure if the PAK file is correct. 2. Close all applications opened. 3. Re-start Windows. 4. Re-install SSMIII (PC application)
104	Error occurred while writing file.	If failed to write to the PAK file.	1. Make sure if there is enough space in selected drive for its safe. 2. Make sure if the PAK file is correct. 3. Close all applications opened. 4. Re-start Windows. 5. Re-install SSMIII (PC application)
105	The file's format is invalid. Specify a correct file.	If the PAK file format is invalid.	1. Make sure if the PAK file is correct. 2. Close all applications opened. 3. Re-start Windows. 4. Re-install SSMIII (PC application)
107	Error occurred in the encryption.	If failed to encrypt the PAK file.	1. Close all applications opened. 2. Re-start Windows. 3. Re-install SSMIII (PC application)
108	Error occurred in the decryption. Check the decryption keyword.	If failed to create a complex file.	1. Confirm the complexed key word. 2. Make sure if the PAK file is correct.
1000	Memory allocation error occurred.	If the PC memory does not have enough space.	1. Close all applications opened. 2. Re-start Windows.
1001	The file's format is invalid or not supported.	If the PAK file format is invalid.	Make sure if the PAK file is correct.



## Pass Thru&lt;SSMIII&gt;

Error Code	Error Message	Cause	Corrective action
4000	Cannot make a thread.	It might be a lack of memories, opened too many applications simultaneously or etc.	1.Close all applications opened. 2. Re-start Windows.
4001	Cannot find the Pass-Thru device.	Cannot find the Pass-thru device, which is registered the registry.	Re-install SSMIII (PC application).
4004	Received Invalid ECU messages.	If a format of the message received from control module is invalid.	1. Make sure if the ignition switch is in "ON" position. 2. Re-try after the data link connector is connected. 3. Confirm the connection of the USB cable.
4007	NO response from the ECU. Check the cause of NO response.	1. If there is no response from control module. 2. Displayed if the connector causes a connection failure. It might be a harness failure as well.	1. Make sure if the ignition switch is in "ON" position. 2. Re-try after the data link connector is connected. 3. Check the harness of the vehicle. 4. Replace control module if the above 1, 2 & 3 methods do not work.
4009	Received invalid ECU identification (SSMID).	If the control module identification (SSM ID) received from control module is invalid.	1. Make sure if the ignition switch is in "ON" position. 2. Re-try after the data link connector is connected. 3. Confirm the connection of USB.
4011	Cannot reprogram while the engine is running. Stop the engine to retry.	If an engine revolution is detected by the reprogramming condition check.	Shut-down the engine.
4013	Connect the test mode connector and click OK to retry.	If you detect the delivery mode fuse (test mode connector) not connected by the reprogramming condition check.	Make sure if the delivery mode fuse (test mode connector) is connected.
4014	The read memory switch is NOT connected. Connect the read memory switch to retry.	If you detect the read memory connector not connected by the reprogramming condition check.	Make sure if the read memory connector is connected.
4015	The ignition switch turns off. Retry from the beginning.	If an ignition OFF is detected by the reprogramming condition check.	Make sure if the ignition switch is in "ON" position.
4016	The shift position is not P. Select the P position to retry.	If you detect the shift range is not the "P" range by the reprogramming condition check.	Make sure if the shift range is in "P" position.



Error Code	Error Message	Cause	Corrective action
4018	Battery voltage is out of specified range. Reprogramming cannot be done.	If you detect the battery voltage is out of the range of standardized range by the reprogramming condition check. (Standardized range of the battery voltage: 10V to 14V)	1. Replace the battery with a new one or charge the battery. It is prohibited to rewrite during battery charging. 2. As for the case of "Off the Car" reprogramming, adjust generated voltage of the inverter within the range of the standard voltage.
4019	ECU flash ROM is not rewritable. Reprogramming is aborted.	If you detect the flash ROM in control module is not rewritable by the reprogramming condition check.	Re-try from the first step after ignition OFF.
4021	Error occurred while rewriting. Reprogramming is aborted.	If an error on the check sum after the control software is transferred is detected. (Failed to transfer the control software.)	1. Make sure if the PAK file is correct. 2. Re-try after the data link connector is reconnected. 3. Confirm the connection of the USB cable. 4. Re-try from the first step after ignition OFF.
4022	Error occurred while rewriting. Reprogramming is aborted.	If an error on the check sum after the application software is transferred is detected. (Failed to transfer the application software.)	1. Make sure if the PAK file is correct. 2. Re-try after the data link connector is reconnected. 3. Confirm the connection of the USB connection. 4. Re-try from the first step after ignition OFF.
4023	Error occurred while rewriting. Reprogramming is aborted.	If an error occurs while the control software is transferred.	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Re-try from the first step after ignition OFF.
4024	Error occurred while rewriting. Reprogramming is aborted.	If an error occurs while the application software is transferred.	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Re-try from the first step after ignition OFF.
4025	The ECU does not have valid identification of after rewriting. Rewriting may not be complete.	If a ROM ID after the reprogramming did not match with an expected one.	Make sure if the PAK file is correct.
4028	Latest logic has already been installed.	If you try to re-execute reprogramming on control module, which has already been reprogrammed. (If the control module has already been updated.)	Reprogramming is not necessary.



Error Code	Error Message	Cause	Corrective action
4029	This ECU is not suitable for reprogramming.	If you perform reprogramming on control module, which is not registered in the PAK file. (If control module is not the one applicable.)	1. Make sure if the PAK file is correct. 2. Confirm the connection of the USB connection. 3. Re-try from the first step after ignition OFF.
4030	CanNOt erase the Flash ROM on the ECU. Reprogramming is aborted.	If failed to erase the flash ROM on control module.	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Re-try from the first step after ignition OFF.
4031	Error occurred in communication. Reprogramming is aborted.	If failed to restart (reset) control module.	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Re-try from the first step after ignition OFF.
4032	Error occurred in communication. Reprogramming is aborted.	If an error occurs while communicating with control module (Start Communication).	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Re-try from the first step after ignition OFF.
4033	Error occurred in communication. Reprogramming is aborted.	If an error occurs while communicating with control module (Access Timing Parameter).	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Re-try from the first step after ignition OFF.
4034	The verification has failed. Reprogramming is aborted.	If an error occurs during the security verification before the reprogramming.	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Re-try from the first step after ignition OFF.
4035	Error occurred in communication. Reprogramming is aborted.	If a communication error occurs while the condition check for reprogramming.	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Re-try from the first step after ignition OFF.



Error Code	Error Message	Cause	Corrective action
4036	Error occurred in communication. Reprogramming is aborted.	If an error occurs while communicating with control module (Request Download).	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Re-try from the first step after ignition OFF.
4037	Error occurred in communication. Reprogramming is aborted.	If an error occurs while communicating with control module (Start Diagnostic Session).	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Re-try from the first step after ignition OFF.
4040	Error occurred while rewriting. Reprogramming is aborted.	If an error occurs while communicating with control module (Transfer Data).	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Re-try from the first step after ignition OFF.
4041	Error occurred while rewriting. Reprogramming is aborted.	If an error occurs while communicating with control module (Check SUM).	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Re-try from the first step after ignition OFF.
4042	Cannot clear the memory.	If an error occurs while communicating with the control module (Memory Clear). It may occur the error if the ignition key is operated too quickly. (Wait 3 seconds after the ignition key is off.)	1. Perform the following steps. 1) The ignition key is OFF for 3 seconds, then ignition key is ON for 3 seconds. 2) Perform memory clear by using SSIII. 3) The ignition key is OFF for 3 seconds. If reprogramming starts, it is successful. 2. Make sure the connection of the USB connector.
4043	Cannot erase the Flash ROM on the ECU. Reprogramming is aborted.	If an error occurs while communicating with control module (Erase Flash).	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Re-try from the first step after ignition OFF.
4045	Cannot reprogram when the vehicle is running. Stop the vehicle to retry.	If speed of the vehicle is detected by the reprogramming condition check.	The vehicle stops. (vehicle speed is zero).



Error Code	Error Message	Cause	Corrective action
4046	Error occurred in the Pass-Thru device.	If an error is detected from the pass-thru device's error.	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection.
4046:7	Cannot open communication port.	If SDI is not connected.	1. Make sure if the ignition switch is in 'ON' position. 2. Confirm if the power of SDI is ON. 3. Re-try after the data link connector is reconnected. 4. Make sure the connection of the USB cable.
4047	Programming voltage is below specified low limit. Reprogramming is aborted.	If the voltage (Vpp) for writing is below the standard. It might be a harness failure.	1. Check the harness of the vehicle. 2. Replace control module.
4048	Programming voltage is above specified high limit. Reprogramming is aborted.	If the voltage (Vpp) for writing is higher than the standard.	1. Check the harness of the vehicle. 2. Replace control module.
4049	Programming voltage is out of specified range. Reprogramming is aborted.	If the voltage (Vpp) for writing does not meet the standard. It might be a harness failure.	1. Check the harness of the vehicle. 2. Replace control module.
4053	Cannot set reprogramming voltage. Reprogramming is aborted.	If failed to apply the voltage (Vpp) for writing.	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection.
4054	Cannot find the supported device. Reprogramming is aborted.	If the pass-thru device registered in the registry can not be found.	Re-install SSMIII. (PC application)
4055	Entry of boot mode has failed.	Migration to the control module reprogramming mode is failed.	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Re-try from the first step after ignition OFF.
4056	Error occurred in communication.	Communication error	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection.
4057	Latest logic has already been installed.	If the sub-logic has already been updated when the main logic and the sub-logic are rewritten simultaneously.	Reprogramming is not necessary.
4058	Latest logic has already been installed.	If the main logic has already been updated when the main logic and the sub-logic are rewritten simultaneously.	Reprogramming is not necessary.



Error Code	Error Message	Cause	Corrective action
4059	No response from the ECU.	If no response from the sub-logic when the main logic and the sub-logic are rewritten simultaneously.	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Re-try from the first step after ignition OFF.
4060	No response from the ECU.	If no response from the main logic when the main logic and the sub-logic are rewritten simultaneously.	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Re-try from the first step after ignition OFF.
4061	This ECU is not suitable for reprogramming.	If the sub-control module is not an applicable one when the main logic and the sub-logic are rewritten simultaneously.	Reprogramming is not necessary
4062	Rewrite is not done.	If there is no applicable control module for reprogramming.	Reprogramming is not necessary
4063	The delivery mode connector is not connected. Connect the delivery mode connector to retry.	If the delivery mode fuse (test mode connector) is not connected	Make sure the connection of the delivery mode fuse (test mode connector).
4064	Auto Mode is not valid for this vehicle. Use Manual Mode.	If the auto mode is selected to the manual selection data.	Perform reprogramming after selecting the manual mode.
4065	Selected PART NO/ROM ID are not for this vehicle. Select the Part NO/ROM ID again.	The error occurs if a vehicle is not the one with selected parts number and the ROM ID, which are specified when the manual selection was rewritten.	Perform reprogramming by re-selecting the applicable one for writing in the manual mode.
4066	Session mode failure. Turn off the ignition switch and retry.	Error on the session mode due to it is the default session. * If it is the default session after the session was changed to the extended session.	1. Re-try after the data link connector is reconnected. 2. Confirm the connection of the USB connection. 3. Re-try from the first step after the ignition OFF.
4067	Session mode failure. Turn off the ignition switch and retry.	Error on the session mode due to it is the programming session. * If it is the programming session while the initial communication. * If it is the programming session after the session was changed to the extended session.	1. Re-try after the data link connector is reconnected. 2. Confirm the connection of the USB connection. 3. Re-try from the first step after the ignition OFF.



Error Code	Error Message	Cause	Corrective action
4068	Session mode failure. Turn off the ignition switch and retry.	Error on the session mode due to it is the extended session. * If it is the extended session while the initial communication.	1. Re-try after the data link connector is reconnected. 2. Confirm the connection of the USB connection. 3. Re-try from the first step after the ignition OFF.
4100	Version code of software for rewrite control is NG.	If the version of the control software in control module is not correct.	Make sure if the PAK file is correct.
4101	Error on rewrite data in flash ROM.	If an error occurs during control module rewriting.	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Re-try from the first step after ignition OFF.
4102	Communication speed (bps) can not be set.	If the baud rate which does not meet control module standard is specified by control module.	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Re-try from the first step after ignition OFF.
4103	Rewrite time exceeds the limit.	If exceeded the limit of the number of control module reprogramming.	Replace control module.
4104	The range of the Rewriting Voltage is not satisfied. Check the contact of OBD Connector. After try to rewrite again.	If the voltage (Vpp) input to the control module for writing does not meet the standard. (judged by control module). It might be a harness failure.	1. Re-try by reconnecting the cable connector or replace the cable with a new one due to it might be a contact failure of the connector. 2. Make sure the harness of the vehicle.
4105	Software for rewrite control is NG.	If the control software on control module is not correct.	Make sure if the PAK file is correct.
4106	Rewritten software for engine control in ECM is NG.	If the engine control software on control module is not correct.	Make sure if the PAK file is correct.
4107	Error occurred in communication.	Communication error with control module	Re-try from the first step after the ignition OFF.
4108	Programming voltage is below specified low limit. Reprogramming is aborted.	Communication error	Re-try from the first step after the ignition OFF.
4150	"Is IG. SW on?", "engine is stalling." Procedure is trying again.	The error for rewriting request on control module. control module refuses its rewrite. If the engine is running or the ignition is OFF.	1. Keep the following steps. 1) Stop the engine. 2) The Ignition key is in "ON" position. 2. If the above "1." do not work, replace control module with a new one.



Error Code	Error Message	Cause	Corrective action
4152	No response from ECM to rewrite signal.	No response from control module on the error with rewriting request. This error is displayed once only after the communication can be done. It might be a disconnection error such as a contact failure during the rewriting. Also, it may be a harness failure.	1. Re-try after the data link connector is reconnected. 2. Make sure the harness of the vehicle.
4153	No response from ECM.	The error not responded from control module.	1. Re-try after the data link connector is reconnected. 2. Make sure the connection of the USB connection. 3. Make sure the harness of the vehicle.
4155	Rewrite voltage is NG. Is connector connection OK? After confirmation, click "OK" then return to forward Vpp signal.	Voltage (Vpp) for writings input to the control module is reported as an error. It is judged by control module. Displayed if the voltage for writings is not normal. It might be a harness failure.	1. Re-try by reconnecting the cable connector or replace the cable with a new one due to it might be a contact failure of the cable. 2. If the above action does not work, replace the control module with a new one.
4157	Received error code signal of flash ROM.	Communication error on control module. control module judged that an error on the rewriting. If a rewriting error occurs in control module.	Replace the control module with a new one. (control module failure).
4401	Error occurred while rewriting. Click "YES" to reprogram again.	Confirmation on retry after the rewriting error.	1. Re-try after the data link connector is reconnected. 2. Confirm the connection of the USB connection. 3. Confirm if the PAK file is correct. 4. Re-try from the first step after the ignition OFF.
4402	Error in rewritten data verifying. Click "YES" to reprogram again.	Confirmation on retry after the verifying error.	1. Re-try after the data link connector is reconnected. 2. Confirm the connection of the USB connection. 3. Confirm if the PAK file is correct. 4. Re-try from the first step after the ignition OFF.



Error Code	Error Message	Cause	Corrective action
4403	Turn off the ignition switch and re-try. If the error repeats, possibly CAN failure.	If the message, "Off the car Reprogramming?", appeared and you clicked "No", although it was not reprogrammed off the car. (If you do the reprogramming on the car, normally the message, "Off the car Reprogramming?", does not appear.)	1. Re-try after the data link connector is reconnected. 2. Confirm the connection of the USB connection. 3. Re-try from the first step after the ignition OFF.
4404	Failed to change the session mode. Reprogramming is aborted.	If an error occurs while communicating with control module (Diagnostic Session Control)	1. Re-try after the data link connector is reconnected. 2. Confirm the connection of the USB connection. 3. Re-try from the first step after the ignition OFF. 4. Make sure the harness of the vehicle.
4405	Error occurred in communication. Reprogramming is aborted.	If an error occurs while communicating with control module (Control DTC Setting).	1. Re-try after the data link connector is reconnected. 2. Confirm the connection of the USB connection. 3. Re-try from the first step after the ignition OFF. 4. Make sure the harness of the vehicle.
4406	Error occurred in communication. Reprogramming is aborted.	If an error occurs while communicating with control module (Communication Control).	1. Re-try after the data link connector is reconnected. 2. Confirm the connection of the USB connection. 3. Re-try from the first step after the ignition OFF. 4. Make sure the harness of the vehicle.
4407	The verification has failed. Reprogramming is aborted.	If an error occurs on security verification before the reprogramming.	1. Re-try after the data link connector is reconnected. 2. Confirm the connection of the USB connection. 3. Re-try from the first step after the ignition OFF. 4. Make sure the harness of the vehicle.
4408	Error occurred in communication. Reprogramming is aborted.	If an error occurs while communicating with control module (Request Download).	1. Re-try after the data link connector is reconnected. 2. Confirm the connection of the USB connection. 3. Re-try from the first step after the ignition OFF. 4. Make sure the harness of the vehicle.



Error Code	Error Message	Cause	Corrective action
4409	Error occurred while rewriting. Reprogramming is aborted.	If an error occurs while transfer the program.	<ol style="list-style-type: none"> <li>1. Re-try after the data link connector is reconnected.</li> <li>2. Confirm the connection of the USB connection.</li> <li>3. Re-try from the first step after the ignition OFF.</li> <li>4. Make sure the harness of the vehicle.</li> </ol>
4411	Error occurred while rewriting. Reprogramming is aborted.	If an error occurs while communicating with control module (Request Transfer Exit).	<ol style="list-style-type: none"> <li>1. Re-try after the data link connector is reconnected.</li> <li>2. Confirm the connection of the USB connection.</li> <li>3. Re-try from the first step after the ignition OFF.</li> <li>4. Make sure the harness of the vehicle.</li> </ol>
4412	Error occurred while rewriting. Reprogramming is aborted.	If an error is detected on the check SUM after the program was transferred or no response to the requirement.	<ol style="list-style-type: none"> <li>1. Confirm if the PAK file is correct.</li> <li>2. Re-try after the data link connector is reconnected.</li> <li>3. Confirm the connection of the USB connection.</li> <li>4. Re-try from the first step after the ignition OFF.</li> </ol>
4413	Error occurred in communication. Reprogramming is aborted.	If an error occurs while communicating with control module (Request Download).	<ol style="list-style-type: none"> <li>1. Re-try after the data link connector is reconnected.</li> <li>2. Confirm the connection of the USB connection.</li> <li>3. Re-try from the first step after the ignition OFF.</li> <li>4. Make sure the harness of the vehicle.</li> </ol>
4414	Cannot erase the Flash ROM on the ECM. Reprogramming is aborted.	If the control module flash ROM cannot be deleted .	<ol style="list-style-type: none"> <li>1. Re-try after the data link connector is reconnected.</li> <li>2. Confirm the connection of the USB connection.</li> <li>3. Re-try from the first step after the ignition OFF.</li> </ol>
4415	Error occurred while rewriting. Reprogramming is aborted.	If an error occurs while transfer the program	<ol style="list-style-type: none"> <li>1. Re-try after the data link connector is reconnected.</li> <li>2. Confirm the connection of the USB connection.</li> <li>3. Re-try from the first step after the ignition OFF.</li> <li>4. Make sure the harness of the vehicle.</li> </ol>



Error Code	Error Message	Cause	Corrective action
4416	Error occurred while rewriting. Reprogramming is aborted.	If an error occurs while communicating with control module (Request Transfer Exit).	<ol style="list-style-type: none"> <li>1. Re-try after the data link connector is reconnected.</li> <li>2. Confirm the connection of the USB connection.</li> <li>3. Re-try from the first step after the ignition OFF.</li> <li>4. Make sure the harness of the vehicle.</li> </ol>
4417	Error occurred while rewriting. Reprogramming is aborted.	If an error is detected on the check SUM after the program was transferred or no response to the requirement.	<ol style="list-style-type: none"> <li>1. Confirm if the PAK file is correct.</li> <li>2. Re-try after the data link connector is reconnected.</li> <li>3. Confirm the connection of the USB connection.</li> <li>4. Re-try from the first step after the ignition OFF.</li> </ol>
4418	Error occurred in communication. Reprogramming is aborted.	If an error occurs while communicating with control module (Request Upload).	<ol style="list-style-type: none"> <li>1. Re-try after the data link connector is reconnected.</li> <li>2. Confirm the connection of the USB connection.</li> <li>3. Re-try from the first step after the ignition OFF.</li> <li>4. Make sure the harness of the vehicle.</li> </ol>
4419	Error occurred in communication. Reprogramming is aborted.	If an error occurs while communicating with control module (Read out ROM) or while the verification.	<ol style="list-style-type: none"> <li>1. Confirm if the PAK file is correct.</li> <li>2. Re-try after the data link connector is reconnected.</li> <li>3. Confirm the connection of the USB connection.</li> <li>4. Re-try from the first step after the ignition OFF.</li> </ol>
4420	Error occurred while rewriting. Reprogramming is aborted.	If an error occurs while communicating with control module (Request Transfer Exit). (Read out ROM)	<ol style="list-style-type: none"> <li>1. Re-try after the data link connector is reconnected.</li> <li>2. Confirm the connection of the USB connection.</li> <li>3. Re-try from the first step after the ignition OFF.</li> <li>4. Make sure the harness of the vehicle.</li> </ol>



Error Code	Error Message	Cause	Corrective action
4421	Cannot clear the memory.	If an error occurs while communicating with control module (Memory clear).	<ol style="list-style-type: none"> <li>1. Perform the following steps. <ol style="list-style-type: none"> <li>1) The ignition key is OFF for 3 seconds, then ignition key is ON for 3 seconds.</li> <li>2) Memory clear by using SSIII.</li> <li>3) The ignition key is OFF for 3 seconds.</li> </ol> </li> <li>2. Make sure the connection of USB connector.</li> </ol>
4422	Cannot clear the memory.	If an error occurs while communicating with the integrated unit or ABS (memory clear).	<ol style="list-style-type: none"> <li>1. Perform the following steps. <ol style="list-style-type: none"> <li>1) The ignition key is OFF for 3 seconds, then ignition key is ON for 3 seconds.</li> <li>2) Memory clear by using SSIII.</li> <li>3) The ignition key is OFF for 3 seconds.</li> </ol> </li> <li>2. Make sure the connection of USB connector.</li> </ol>
4423	Cannot clear the memory.	If an error occurs while communicating with the integrated unit (Read DTC) or if the acquired DTC are more than one.	<ol style="list-style-type: none"> <li>1. Re-try after the data link connector is reconnected.</li> <li>2. Confirm the connection of the USB connection.</li> <li>3. Re-try from the first step after the ignition OFF.</li> <li>4. Make sure the harness of the vehicle.</li> </ol>
4425	Cannot clear the memory.	If an error occurs while communicating with ABS (Start Diagnostic Session).	<ol style="list-style-type: none"> <li>1. Re-try after the data link connector is reconnected.</li> <li>2. Confirm the connection of the USB connection.</li> <li>3. Re-try from the first step after the ignition OFF.</li> <li>4. Make sure the harness of the vehicle.</li> </ol>
4501	Reprogramming has failed. Click "YES" to reprogram again.	The error is detected on the check SUM.	<ol style="list-style-type: none"> <li>1. Re-try after the data link connector is reconnected.</li> <li>2. Make sure the connection of the USB connection.</li> <li>3. Confirm if the PAK file is correct.</li> <li>4. Re-try from the first step after ignition OFF.</li> </ol>



Error Code	Error Message	Cause	Corrective action
4517	Error in rewritten data verifying. Click "YES" to reprogram again.	The error is detected during the verification.	<ol style="list-style-type: none"> <li>1. Re-try after the data link connector is reconnected.</li> <li>2. Make sure the connection of the USB connection.</li> <li>3. Confirm if the PAK file is correct.</li> <li>4. Re-try from the first step after ignition OFF.</li> </ol>

## Remote<NSM>

Error Code	Error Message	Cause	Corrective action
3000	Cannot open the serial port.	If failed to open the RS-232C communication port using for writing to the cartridge.	<ol style="list-style-type: none"> <li>1. Confirm if the COM port number for the PC cable is the same number as the one selected at the option.</li> <li>2. Confirm the connection of the PC cable.</li> <li>3. Confirm if NSM power is ON.</li> <li>4. Close all the applications, which are opened. (Especially applications, which are using the COM port.)</li> </ol>
3001	Cannot write to serial port.	If failed to transmit to the RS-232C communication port using for writing to the cartridge.	<ol style="list-style-type: none"> <li>1. Make sure if the COM port number for the PC cable connection is as the same number as the one specified at the option.</li> <li>2. Confirm the connection of the PC cable.</li> <li>3. Make sure if the NSM power is ON.</li> <li>4. Close all of the other applications opened. (Especially for an application, which is using the COM port.)</li> </ol>
3002	Cannot read from serial port.	If you failed to receive from the RS-232C communication port using for writing to the cartridge.	<ol style="list-style-type: none"> <li>1. Make sure if the COM port number for the PC cable connection is as the same number as the one specified at the option.</li> <li>2. Confirm the connection of the PC cable.</li> <li>3. Make sure if the NSM power is ON.</li> <li>4. Close all of the other applications opened. (Especially for an application, which is using the COM port.)</li> </ol>



Error Code	Error Message	Cause	Corrective action
3012	User cancelled.	If the rewriting process of the cartridge is cancelled by clicking "NO" key during the process.	Perform the down-load (Remote) again if necessary.
3022	Error occurred while erasing the cartridge.	If failed to erase the cartridge flash ROM.	1. Make sure the PC cable connection. 2. Re-install SSMIII. (PC application) 3. Replace the cartridge.
3023	Error occurred while writing the cartridge.	If failed to write to the cartridge flash ROM.	1. Make sure the PC cable connection. 2. Re-install SSMIII. (PC application) 3. Replace the cartridge.
3024	Error occurred while reading the cartridge data.	If failed to read the data on the cartridge.	1. Make sure the PC cable connection. 2. Re-install SSMIII. (PC application) 3. Replace the cartridge.
3025	Timeout occurred during communication.	If a time-out occurs during the communication of the cartridge rewriting.	1. Make sure the PC cable connection. 2. Close all of the other applications opened. 3. Re-start Windows. 4. Re-install SSMIII. (PC application)
3031	Cancelled rewriting the cartridge. The cartridge is invalid.	If the rewriting process on the cartridge is cancelled.	Perform the down-load (Remote) again.
3032	Error occurred while rewriting the cartridge. The cartridge is invalid.	If the rewriting process on the cartridge is stopped by an error.	Perform the down-load (Remote) again.
3054	Rewriting the cartridge has failed. The cartridge is invalid.	If an error occurs on the check SUM after rewriting the cartridge.	1. Make sure the PC cable connection. 2. Replace the cartridge.

## Control Module Reprogramming Error Code List (NSM LCD Display)

### Remote<NSM>

Error Code	Error Message	Cause	Corrective action
-	Command Error Occurred!	If an undefined command is used between the PC and NSM.	1. Make sure the RS232C cable connection. 2. Follow the steps with the error message on the PC.



Error Code	Error Message	Cause	Corrective action
-	Formatting Error Occurred!	If the command parameter used between the PC and NSM has an error.	1. Make sure the RS232C cable connection. 2. Follow the steps with the error message on the PC.
-	Error occurred during writing	If failed to rewrite the flash memory in the cartridge.	Make sure whether it is writable if the cartridge is write-protect.
-	Error Occurred Deleting!	If failed to delete the flash memory in the cartridge.	Make sure whether it is writable if the cartridge is write-protect.
-	Read error occurred	If failed to read the data in the cartridge.	Make sure the RS232C cable connection.
-	Communication Error Occurred!	If a serial communication error or command time-out has occurred.	1. Make sure the RS232C cable connection. 2. Follow the steps with the error message on the PC.
-	Error occurred	If an error none of the above has occurred on the PC.	Follow the steps with the error message on the PC.



## SSMIII revision history

Release	PC Application version	CF Application version	Main revision history	Remarks
Oct. 2014	Ver.1.43.57.7 Ver.1.43.57.8	Ver.1.15.0	Support 16MY vehicles	
			Addition of Compression monitor function.	
			Addition of DST-i Control Module Analog Simultaneous Measurement (SDR) function.	
			Addition of DST-i Control Module Analog Simultaneous Measurement function.	
Jan. 2015	Ver.1.44.58.7 Ver.1.44.58.8	Ver.1.16.0	Support 16MY vehicles	
			Addition of Occupant Detection System Rezero function.	
Apr. 2015	Ver.1.45.59.7 Ver.1.45.59.8	Ver.1.17.0	Support 17MY vehicles	
			Addition of Power Steering System Clear Vehicle Specific Assist Map function.	
Jul. 2015	Ver.1.46.60.7 Ver.1.46.60.8	Ver.1.18.0	Support 17MY vehicles	



## List of Part Numbers

No.	Part No.	Name	Remarks
1-1	1B022XU0	SSMIII KIT	Without carrying case
1-2	1B023XG0	SSMIII KIT	With carrying case
2	1B061XZ0	SSMIII KIT CARRYING CASE	SSMIII KIT content
3	1B040XZ0	SDI (SUBARU DIAGNOSTIC INTERFACE)	SSMIII KIT content
4	1B050XZ0	DIAGNOSTIC CABLE	SSMIII KIT content
5	1B070XZ0	USB CABLE	SSMIII KIT content
6	1B082XZ0	CF CARD	SSMIII KIT content
7	1B110XZ0	REMOTE BOX	Optional part
8	1B120XZ0	PULSE/ANALOG KIT	Optional part
9	95171-01061	DST-i (without LCD, without Bluetooth) SET	
10	95171-01072	DST-i (without LCD, with Bluetooth*1) SET	
11	95171-10110	USB CABLE	Contained in the DST-i set
12	95171-12830	DATALINK CABLE (1.5m)	Contained in the DST-i set

\*1 Bluetooth model is available only in the countries where DENSO acquires the radio wave certification.

### NOTE:

- Part No. of SSMIII KIT differs depending on destination etc. For applicable Part No., contact the dealership in which you purchased SSMIII.
- Regarding the availability of the Bluetooth model, please ask DENSO sales company of your area.